DOCUMENT RESUME

ED 053 246

VT 010 763

TITLE	California Manpower Needs to 1975.
INSTITUTION	California State Dept. of Human Resources Development, Sacramento.
PUB DATE	Oct 69
NOTE	117p.
EDRS PRICE	EDRS Price MF-$0.65 HC-$6.58
DESCRIPTORS	Charts, Clerical Workers, *Employment Opportunities, *Employment Projections, *Manpower Needs, *Occupational Information, Professional Personnel, Service Workers, Skilled Workers, *State Surveys, Tables (Data), Technical Occupations
IDENTIFIERS	*California

ABSTRACT

This guide for those concerned with training needs of vocational planning is designed to provide detailed occupational projections for the State of California. Manpower needs for more than 150 occupational categories were computed by making estimates by industry and occupation for 1960 and 1968 and projections for 1975. Over the 7-year period from 1968-1975, 1.4 million new jobs will be created and 1.3 million will be open because of individuals leaving the labor force in California. About 60 percent of the State's total manpower needs will be for white collar workers. There will be openings for 535,000 professional and technical workers, 580,000 clerical workers, 325,000 craftsmen, and 390,000 service workers. White collar and service jobs will increase at a faster rate than blue collar jobs, and by 1975, it is anticipated that professional and technical, clerical, and service jobs will account for one-half of the State's employment. The guide contains 79 occupational briefs of the numerically largest categories (representing 95 percent of the State's manpower needs), each listing a job outlook, representative job titles from the "Dictionary of Occupational Titles," opportunities for special worker groups, and titles of any related "California Occupational Guides." (BC)

62

CALIFORNIA MANPOWER NEEDS to 1975

ED053246

STATE OF CALIFORNIA
Ronald Reagan, Governor

HUMAN RELATIONS AGENCY
Spencer Williams, Secretary

DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT
(Successor to DEPARTMENT OF EMPLOYMENT)
Gilbert L. Sheffield, Director

OCTOBER 1969

VT010763

ED053246

CALIFORNIA MANPOWER NEEDS TO 1975

STATE OF CALIFORNIA
Ronald Reagan, *Governor*

HUMAN RELATIONS AGENCY
Spencer Williams, *Secretary*

DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT
(Successor to DEPARTMENT OF EMPLOYMENT)
Gilbert L. Sheffield, *Director*

October 1969
Second Edition

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

INQUIRIES REGARDING MATERIAL IN THIS REPORT SHOULD BE DIRECTED TO:
CALIFORNIA DEPARTMENT OF HUMAN RESOURCES DEVELOPMENT, DIVISION OF RESEARCH AND STATISTICS
800 CAPITOL MALL SACRAMENTO, CALIFORNIA 95814

CALIFORNIA MANPOWER NEEDS TO 1975

CONTENTS

Subject	Page Number
PART I: INTRODUCTION	1
PART II: SUMMARY AND CONCLUSIONS	3
Chart A - How 2.7 Million Job Opportunities Will be Distributed	3
Summary of Job Needs	3
The Changing Occupational Composition of the Work Force	5
Conclusions	6
PART III: PROSPECTS FOR SELECTED OCCUPATIONAL CATEGORIES	7
Chart B. Job Opportunities for Professional and Managerial Workers	8
1. Professional, Technical, and Kindred	11
2. Managers, Officials, and Proprietors (except Farm)	36
Chart C. Job Opportunities for Clerical and Sales Workers	40
3. Clerical and Kindred	43
4. Sales Workers	52
Chart D. Job Opportunities for Craftsmen, Foremen, and Kindred Workers	56
5. Craftsmen, Foremen, and Kindred	59
Chart E. Job Opportunities for Operatives and Laborers	76
6. Operatives	79
7. Laborers, except Farm and Mine	88
Chart F. Job Opportunities for Service Workers, Farmers and Farm Workers	90
8. Service Workers	93
9. Farmers and Farm Workers	106

Subject — Page Number

PART IV: APPENDIX 107

Assumptions 107

Methods 107

1. General Description of Methods

2. Summarizing the Information

Statistical Tables 111

Table 1. Job Opportunities from Industrial Expansion and Replacement Needs - California, 1968-1975 111

Table 2. Jobs by Detailed Occupation - California, 1960, 1968, and Projected to 1975 117

Table 3. Distribution of Jobs by Occupational Category, 1960, 1968, and 1975 123

PART I INTRODUCTION

CALIFORNIA MANPOWER NEEDS TO 1975 is designed to meet the growing demands of manpower planners who require detailed occupational projections for the State. This report is intended to serve as a guide to all who are concerned with training needs and vocational planning.

Manpower needs are projected for more than 150 occupational categories over the forecast period (mid-1968 to mid-1975). The occupational classifications are those used by the U.S. Census and the Department of Labor, Bureau of Labor Statistics. Separate projections are made for:

(1) New jobs which will be created by industrial expansion over the seven-year period; and

(2) Replacement needs because some jobs will be vacated by people who leave the State's labor force during that period.

Excluded from the report are job opportunities resulting from workers who transfer between jobs, but remain in the State's labor force. Such transfers do not contribute to the net increase in manpower needs.

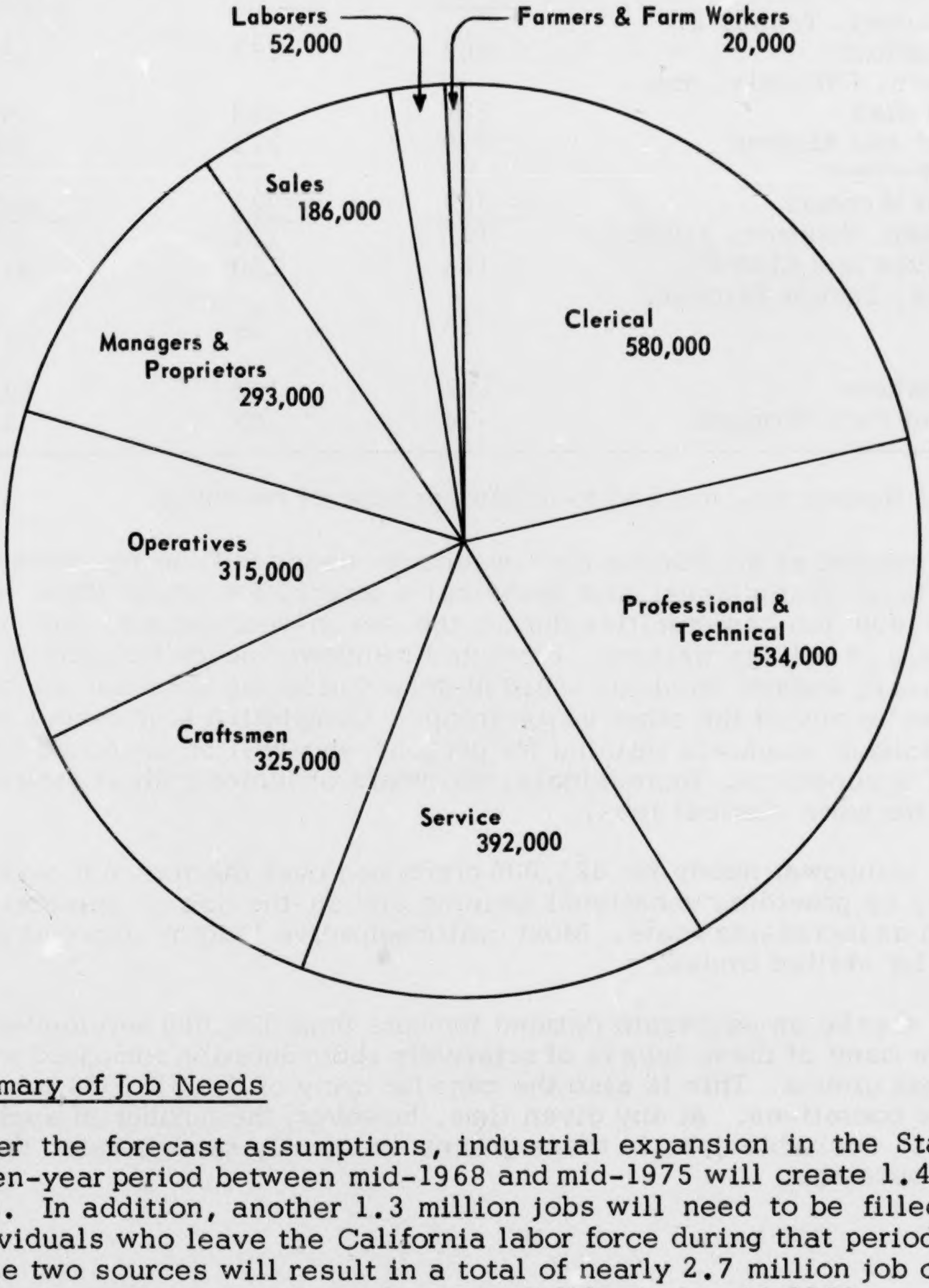
To arrive at these forecasts of manpower needs, average employment by industry and occupation is estimated for 1960 and 1968, and projected to 1975. All California civilian employment is accounted for in these estimates. The figures reported are in terms of number of jobs, not the number of individuals. The methods and the economic assumptions used in preparing the forecasts, as well as detailed statistical tables, are given in the appendix, at the end of the report.

These are not official projections of the State of California. While job needs and occupational employment are expressed as specific numbers, limitations of the data and risks inherent in economic forecasting preclude any claims of precision. Nevertheless, these estimates provide a systematic framework of numbers which indicate relative magnitudes, and which the user can modify in the light of more detailed or recent information.

PART II SUMMARY AND CONCLUSIONS

CHART A. HOW 2.7 MILLION JOB OPPORTUNITIES WILL BE DISTRIBUTED AMONG THE MAJOR OCCUPATIONAL GROUPS

MID-1968 TO MID-1975



Summary of Job Needs

Under the forecast assumptions, industrial expansion in the State over the seven-year period between mid-1968 and mid-1975 will create 1.4 million new jobs. In addition, another 1.3 million jobs will need to be filled to replace individuals who leave the California labor force during that period. Together, these two sources will result in a total of nearly 2.7 million job opportunities for persons who were not employed in California in mid-1968.

Table a. summarizes California manpower needs in terms of the major occupational categories.

Table a. Job Opportunities for Industry Expansion and Replacement Needs, California, 1968 to 1975*

(in thousands)

Occupational Category	Industry Expansion	Replacement Needs	Net Total From These Sources
Total, All Occupations	1,436	1,261	2,697
White Collar Workers	905	688	1,593
Professional, Technical and Kindred	362	172	534
Managers, Officials, and Proprietors	139	154	293
Clerical and Kindred	309	271	580
Sales Workers	95	91	186
Blue Collar Workers	369	323	692
Craftsmen, foremen, kindred	191	134	325
Operatives and Kindred	165	150	315
Laborers, Except Farm and Mine	13	39	52
Service Workers	197	194	392
Farmers and Farm Workers	-34	55	20

*Individual figures may not add to totals because of rounding.

Nearly 60 percent of the State's total manpower needs will be for white-collar workers. Most professional and technical workers, for whom there will be nearly 535,000 job opportunities during the seven-year period, will require several years of college training. Projected manpower needs for clerical workers, which will amount to about 580,000 jobs during the forecast period, are greater than for any of the other major groups. Completing high school is usually the minimum academic training for persons who will be accepted for work in clerical occupations. Increasingly, two years of junior college are required to qualify for some clerical jobs.

California Manpower needs for 325,000 craftsmen over the forecast period can be met only by providing vocational training and on-the-job or apprenticeship training on an increasing scale. Most craftsmen serve lengthy apprenticeships to qualify for skilled trades.

There will also be an aggregate demand for more than 390,000 service workers. Training for many of these jobs is of relatively short duration compared with the other largest groups. This is also the case for many of the 315,000 job opportunities for operatives. At any given time, however, the number of applicants for the most desirable jobs in these groups is usually much greater than the number of openings.

The Changing Occupational Composition of the Work Force

The occupational structure of the California labor force is summarized below.

Table b. Distribution of Jobs by Occupational Category, 1960, 1968, and 1975*
(Number of jobs are in thousands)

	1960		1968		1975	
	Number	% of total	Number	% of total	Number	% of total
Total, All Occupations	5,933	100	7,724	100	9,160	100
White-collar workers	2,973	50.1	4,125	53.3	5,029	54.9
Professional, Technical, and Kindred	815	13.7	1,275	16.5	1,637	17.9
Managers, Officials, and Proprietors	729	12.3	913	11.8	1,052	11.5
Clerical and Kindred	997	16.8	1,378	17.8	1,687	18.4
Sales Workers	432	7.3	559	7.2	653	7.1
Blue-collar workers	1,963	33.1	2,369	30.7	2,737	29.8
Craftsmen, Foremen, Kindred	797	13.4	965	12.5	1,156	12.6
Operatives and Kindred	872	14.7	1,103	14.3	1,268	13.8
Laborers, Except Farm and Mine	294	5.0	301	3.9	313	3.4
Service Workers	690	11.6	958	12.4	1,155	12.6
Farmers and Farm Workers	307	5.2	273	3.5	239	2.6

*Individual figures may not add to totals because of rounding.

In California's expanding economy, white-collar and service jobs are increasing at a faster rate than blue-collar jobs. With few exceptions, professional and technical workers, clerical workers, and service jobs are increasing their portions of the total work force. By 1975, these three groups will account for very nearly half the State's employment. In the aggregate, they will amount to nearly four-and-a-half million of California's projected nine million employed. Only about four out of every ten workers were in these categories in 1960.

The number of sales workers will continue to increase at about the same rate as the State's labor force. Operatives, laborers, and farmers and farm workers are losing ground relative to their share of the total work force. The proportion of craftsmen, which declined slightly in California between 1960 and 1968, should maintain itself over the forecast period.

Certain occupations run counter to the general trend. Among the skilled craftsmen, for example, the number of mechanics and repairmen is growing at a much faster rate than the entire category. On the other hand, the number of private household workers is not increasing so fast as most of the other service occupations.

Among the fastest growing of all occupational groups are the technicians. Professional medical and health workers, as well as the nonprofessional medical occupations, are increasing rapidly.

Conclusions

The need to provide our emerging work force with appropriate training is only too evident. More people will have to train for longer periods of time if future manpower needs are to be met. Motivating large numbers of young people to prepare for occupations in which the needs will be greatest must be accomplished years before they are actually ready to assume their roles as productive citizens.

Occupations requiring little preemployment training usually have large surpluses of job applicants. With few exceptions, such occupations are growing at a slower rate than the work force, or are actually diminishing. The result of this process is a "job squeeze" among the less fortunate members of the State's work force. Shortages, when they exist among these jobs, will most likely develop in temporary and seasonal work, in menial occupations, low paid work, and in jobs where working conditions are very poor. Such occupations are seldom acceptable as career goals, although they can serve to bridge the gap between having no work at all and the opportunity to earn a rewarding living. The disadvantaged among us, most of whom are already in the labor force, frequently lack the academic training and skills which will be most in demand. Therefore, new programs on a massive scale which will provide for both retraining of skills and remedial training in basic academic subjects appear mandatory. Only in this way will a significant proportion of the disadvantaged be able to compete successfully in tomorrow's labor market.

PART III PROSPECTS FOR SELECTED OCCUPATIONAL CATEGORIES

This section of the report represents a series of 79 occupational briefs concerning job outlook for the numerically largest categories. Although this procedure excludes about half the groups for which information was obtained, it accounts for 95% of the State's manpower needs.

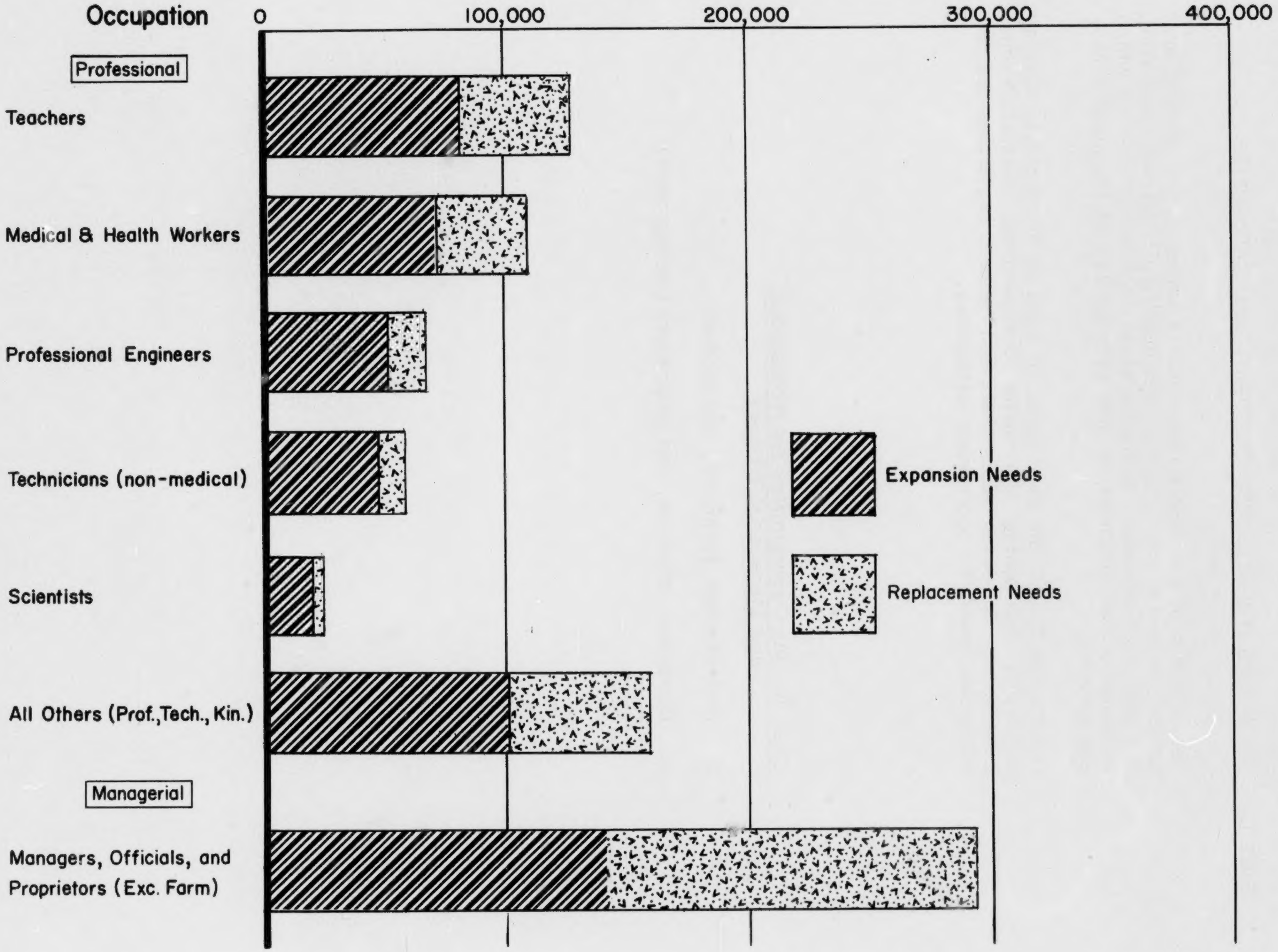
Charts B to F, and the page opposite each of these charts display highlights concerning the major occupational classifications. Immediately following each chart and related highlights are the individual briefs for appropriate categories.

Chart B. Job Opportunities for Professional and Managerial Workers

1. Professional, technical, and kindred
2. Managers, officials, and proprietors (except farm)

Chart B. Job Opportunities for Professional and Managerial Workers

Total Number of Jobs from Industrial Expansion and from Replacement Needs, 1968 – 1975



1. Professional, Technical, and Kindred

Highlights

Nearly 535,000 job opportunities will be available for professional and related workers between mid-1968 and mid-1975. Academic standards for most of these occupations are high and formal training periods are usually long. Ordinarily, a person cannot become qualified in a profession in the amount of time allowed by most manpower retraining programs.

An exception is the occupation of draftsman, in which there will be about 10,000 more job opportunities in California over the 1968-1975 period. Another numerically significant professional field, where conventional standards for preparation often do not apply, is that for artists, athletes, and entertainers, in which more than 30,000 job opportunities will become available by the mid-seventies. Many of these are likely to come from outside the State, however, since the search for talent in these occupations is nationwide.

2. Managers, Officials, and Proprietors (Except Farm)

Highlights

Among this group of occupations, estimates of manpower needs total nearly 295,000 during the forecast period. Nearly one-third of these opportunities will be for individuals to become self-employed proprietors of small businesses, a sector of the labor market which is frequently overlooked in today's wage and salary oriented society. Most managerial jobs will be in the catchall group designated as managers, officials, and proprietors, n.e.c. Here, the largest proportion of opportunities will be in trade, where about 95,000 jobs will need to be filled. Job opportunities for managers will exceed 50,000 in the service industries, with substantial but smaller numbers in the finance, insurance, and real estate sector, in manufacturing and in the construction industry.

Additional detail concerning employment opportunities for selected professional and managerial occupations is given in the pages immediately following.

Engineers, Aeronautical

Job Outlook

The employment of aeronautical engineers in California is expected to increase from an average of nearly 20,000 in 1968 to about 24,000 in 1975, providing about 4,000 job opportunities. During the forecast period, another 1,500 opportunities are expected as a result of aeronautical engineers leaving the State's labor force.

Job opportunities for aeronautical engineers will be concentrated in a small group of California industries. The aircraft manufacturing industry will be the foremost source of new and replacement job opportunities. The federal government and business services, primarily designing and consulting services, will also provide a significant number of new job opportunities. Aeronautical engineers who venture into the teaching profession will also find opportunities in the educational services sector of the California economy.

Representative DOT Titles in This Category

AERODYNAMIST (aircraft mfg.) 002.081
AIRCRAFT DESIGNER (aircraft mfg.) 002.081
AERONAUTICAL ENGINEER (profess. & kin.) 002.081
FLIGHT ANALYST (aircraft mfg.) 002.081
STRESS ANALYST, AIRCRAFT (aircraft mfg.) 002.081
TEST ENGINEER, AIRCRAFT (aircraft mfg.) 002.081
WIND TUNNEL TEST ENGINEER (aircraft mfg.) 002.081
RESEARCH ENGINEER, AERONAUTICAL (aircraft mfg.) 002.081
ENGINEER, CONTROLS (aircraft mfg.) 002.081
ENGINEER, STANDARDS AND ANALYSIS (aircraft mfg.) 002.081

Opportunities for Special Worker Groups

Nearly all engineers in this category have completed a four-year college course in aeronautical engineering. Very few women are employed in this profession in California.

Opportunities will be very limited for people who have not obtained a bachelor's degree in aeronautical engineering or physics. Some persons without a degree are able to fill jobs in these occupations after long experience in a related occupation, such as engineering technician.

During early 1969, these specialists were reported in short supply in the Los Angeles-Long Beach Area, where the aircraft industry is concentrated. Shortages of applicants are likely to continue during most of the forecast period.

Related California Occupational Guide

Aerospace Engineer, No. 352.

Engineers, Civil

Job Outlook

Employment of civil engineers is expected to average about 33,500 in California by 1975. This represents an increase of more than 8,000 new jobs above the 1968 average employment of 25,000. Another 3,000 jobs will become available over the forecast period as people currently in these occupations leave the State's labor force.

Most of the new job opportunities for civil engineers will be in the construction industry. Substantial numbers of civil engineers will also find opportunities in private engineering and research consulting firms, and with government.

Representative DOT Titles in This Category

CONSTRUCTION ENGINEER (profess. & kin.) 005.081
CIVIL ENGINEER (profess. & kin.) 005.081
ENGINEER, SOILS (profess. & kin.) 024.181
HIGHWAY ENGINEER (profess. & kin.) 005.081
HYDRAULIC ENGINEER (profess. & kin.) 005.081
IRRIGATION ENGINEER (agric.) 005.081
MATERIALS ENGINEER (profess. & kin.) 005.081
PHOTOGRAMMETIC ENGINEER (profess. & kin.) 018.187
SANITARY ENGINEER (profess. & kin.) 005.081
STRUCTURAL ENGINEER (const.) 005.081

Opportunities for Special Worker Groups

Entrance into these occupations almost always requires at least a bachelor's degree in civil engineering, which involves four or more years of full-time college study. Registration with the State of California as a "professional engineer", "civil engineer", or "structural engineer" requires both acceptable engineering experience and passing State examinations. Few women are employed in these occupations.

During early 1969, civil engineers for government jobs were listed as being in short supply in the Los Angeles Area.

Related California Occupational Guide

Civil Engineer, No. 39.

Engineers, Electrical

Job Outlook

The number of jobs in this rapidly growing profession increased from about 29,000 in 1960 to an average of just over 46,000 in 1968. This trend is expected to continue, reaching an average of nearly 60,000 by 1975. In addition to the 14,000 new jobs from industrial expansion will be another 3,000 job opportunities which will become available as people currently in this profession leave the State's labor force during the seven-year forecast period.

The electrical machinery manufacturing industry and business services, the engineering sector of which consists mostly of consulting, designing, and testing firms, will be major sources of jobs. Aircraft and instruments manufacturing, communications and utilities companies, and the federal government will also provide numerous opportunities. Jobs will become available on a lesser scale in a number of other California industries.

Representative DOT Titles in This Category

CABLE ENGINEER (tel. & tel.) 003.187
ELECTRICAL ENGINEER (profess. & kin.) 003.081
ELECTRICAL ENGINEER, POWER (light, heat, power) 003.187
ELECTRICAL-EQUIPMENT ENGINEER (profess. & kin.) 003.081
ELECTRONIC ENGINEER (profess. & kin.) 003.081
EQUIPMENT ENGINEER (tel. & tel.) 003.081
ILLUMINATING ENGINEER (profess. & kin.) 003.081
POWER PLANT ENGINEER (light, heat, power) 003.081
RADIO ENGINEER (profess. & kin.) 003.081
SIGNAL ENGINEER (profess. & kin.) 003.081
TELEPHONE ENGINEER (tel. & tel.) 003.081
TRANSMISSION ENGINEER (light, heat, power) 003.187

Opportunities for Special Worker Groups

Entrance into these jobs is usually very difficult for persons who do not have at least a bachelor's degree in electrical engineering, physics, or some related science. The best method of entry is to complete the curriculum leading to a bachelor's degree in electrical engineering in an accredited college. Very few women are employed in these occupations in California.

During early 1969, shortages of several electrical engineering specialties were reported in major labor market areas of the State.

Related California Occupational Guides

Electrical Engineer, No. 12; Electronics Engineer, No. 11.

Engineers, Industrial

Job Outlook

There will be a total of nearly 7,000 jobs for industrial engineers during the seven-year period between 1968 and 1975. About 5,500 of these job opportunities will be the result of industrial expansion, as employment of industrial engineers increases from the 1968 average of about 15,000 to nearly 20,500 by 1975. Replacement needs for people leaving the State's labor force during this forecast period will account for the other 1,500 job opportunities.

About one-half of the jobs will originate in manufacturing industries; mainly fabricating metal, machinery, electrical machinery, aircraft and instruments manufacturing. Business services, most notably consulting and management firms, will also exhibit a rapidly increasing demand.

Representative DOT Titles in This Category

EFFICIENCY ENGINEER (profess. & kin.) 012.188
FACTORY LAY-OUT MAN (profess. & kin.) 012.188
FIRE-PROTECTION ENGINEER (profess. & kin.) 012.188
INDUSTRIAL ENGINEER (profess. & kin.) 012.188
METHODS ENGINEER (profess. & kin.) 012.188
PRODUCTION ENGINEER (profess. & kin.) I 012.188
QUALITY-CONTROL ENGINEER (profess. & kin.) 012.188
SAFETY ENGINEER (profess. & kin.) 012.081
TIME-STUDY ENGINEER (profess. & kin.) 012.188
VALUATION ENGINEER (profess. & kin.) 161.188

Opportunities for Special Worker Groups

The usual basic educational requirement for acceptance as an industrial engineer is a Bachelor of Science in Mechanical Engineering, with specialization in industrial engineering, or a related engineering field. The industrial engineer should also have a working knowledge of business and management principles. Only a small number of women are employed in these occupations in California.

During early 1969, shortages of several types of industrial engineers were reported by Los Angeles Area aerospace industries; while demand in other areas of the State fluctuated with contract awards.

Related California Occupational Guides

Industrial Engineer, No. 3; Mechanical Engineer, No. 5; Production Planner, No. 271; Quality Control Manager, No. 256.

Engineers, Mechanical

Job Outlook

Employment in this occupation increased to an average of about 31,000 in 1968 from a 1960 employment of around 21,000. This rate of expansion is expected to continue, and by 1975 employment should average more than 38,000. About 3,000 additional jobs will need to be filled to replace persons leaving the State labor force during the 1968-1975 forecast period.

These jobs will be distributed among many California industries. Most of the job opportunities, however, will be in the aerospace group of manufacturing industries. Among the service industries, engineering consulting and designing firms and other miscellaneous business enterprises will also have substantial job opportunities for workers in these professions.

Representative DOT Titles in This Category

AIR-CONDITIONING ENGINEER (profess. & kin.) 007.081
AUTOMOTIVE ENGINEER (auto. mfg.) 007.081
COMBUSTION ENGINEER (profess. & kin.) 008.081
HEATING ENGINEER (light, heat, power) 007.151
MARINE ENGINEER (profess. & kin.) 014.081
MECHANICAL ENGINEER (profess. & kin.) 007.081
OPTICAL ENGINEER (profess. & kin.) 019.081
ORDNANCE ENGINEER (ammunitions; explosives) 019.081
PACKAGING ENGINEER (paper goods) 019.187
REFRIGERATION ENGINEER (profess. & kin.) 007.081
TOOL ENGINEER (profess. & kin.) 007.081
UTILIZATION ENGINEER (light, heat, power) 007.081

Opportunities for Special Worker Groups

A Bachelor of Science degree in Mechanical Engineering is the preferred minimum requirement for acceptance into these occupations. In addition to the degree, mechanical engineers must also pass an examination and be licensed by the State of California. Candidates for this license must have a combination of six years of education and training before they are considered for registration. Only a very small number of women are employed in these occupations in California.

During 1969, Los Angeles aerospace firms continue to recruit mechanical engineers with recent degrees who are oriented to research, design and development.

Related California Occupational Guides

Mechanical Engineer, No. 5; Preservation and Packaging Specialist, Aerospace Components, No. 325; Tool Designer, No. 178.

Engineers, Other Technical

Job Outlook

About 13,000 job opportunities will be available to persons qualified for employment in these occupations during the 1968-1975 forecast period. Over 10,000 of these will be new jobs created as a result of industrial expansion, as 1968 average employment of about 30,000 increases to nearly 40,000 by 1975. Replacement needs for persons leaving the State's labor force during the forecast period will account for the remaining 3,000 job opportunities.

Jobs in these occupations are dispersed throughout many of California's industries. The largest number of opportunities for workers in this category will be in business services and miscellaneous engineering and architectural services. Large numbers will also find jobs in wholesale trade, and in the manufacturing sector, where job opportunities will be concentrated in aerospace firms.

Representative DOT Titles in This Category

Sales Engineers:	SALES ENGINEER (profess. & kin.) 007.151
	SALES ENGINEER, OIL WELL SERVICES (petrol. prod.) 010.151
Engineers, n.e.c.:	ACOUSTICAL ENGINEER (profess. & kin.) 003.081
	AGRICULTURAL ENGINEER (profess. & kin.) 013.081
	APPLICATIONS ENGINEER (profess. & kin.) 020.081
	DISTRIBUTION ENGINEER (light, heat, power) 003.187
	FACTORY ENGINEER (profess. & kin.) 007.187
	MATERIALS ENGINEER (profess. & kin.) 005.081
	SALVAGE ENGINEER (profess. & kin.) 019.187
	SANITARY ENGINEER (profess. & kin.) 005.081
	TRAFFIC ENGINEER (gov. serv.) 019.188

Opportunities for Special Worker Groups

The best method of entry into these occupations is to obtain a Bachelor of Science degree in an appropriate branch of engineering. Probably more engineers in this category were trained as mechanical engineers than any other academic speciality. Many of these jobs require extensive experience in addition to formal training. Sales engineers, for example, must be qualified engineers capable of selling highly technical equipment. Few women are employed in these occupations in California industries.

Related California Occupational Guides

Agricultural Engineer, No. 426; Electrical Engineer, No. 12; Mechanical Engineer, No. 5.

Chemists

Job Outlook

Employment in this category increased from just over 8,000 in 1960 to an average of nearly 13,500 in 1968. An estimated average of 17,500 chemists are expected to be employed in 1975 for a gain of 4,000 jobs during the forecast period. Replacement needs for chemists leaving the labor force between mid-1968 and mid-1975 will account for more than 1,000 additional jobs.

The chemical and petroleum manufacturing industries will be the major source of job opportunities for chemists. Medical and educational services are also expected to provide a substantial number of jobs, while the aerospace group of manufacturing industries, government, and food processing will account for most of the remaining job opportunities.

Representative DOT Titles in This Category

ASSAYER (profess. & kin.) 022.281
BIOCHEMIST (profess. & kin.) 041.081
CHEMIST, ANALYTICAL (profess. & kin.) 022.081
CHEMIST, DYE (profess. & kin.) 022.081
CHEMIST, FOOD (profess. & kin.) 022.081
CHEMIST, INORGANIC (profess. & kin.) 022.081
CHEMIST, ORGANIC (profess. & kin.) 022.081
CHEMIST, PHYSICAL (profess. & kin.) 022.081
CHEMIST, TEXTILE (profess. & kin.) 022.081
CHEMIST, WATER PURIFICATION (water works) 022.281
COLORIST (profess. & kin.) I 022.181

Opportunities for Special Worker Groups

A Bachelor of Science degree in chemistry is generally required for entry-level professional work. Students usually spend their first two years of college in a general chemistry course, then spend the remainder studying the particular branch of chemistry they plan to enter. Only about 10 percent of the chemists in California are women.

Related California Occupational Guide

Chemist, No. 22.

Job Outlook

About 10,000 job opportunities will be available to prospective draftsmen during the 1968-1975 forecast period. Industrial expansion, which will increase the employment of draftsmen from the 1968 average of nearly 37,000 to about 44,000 in 1975, will account for over 7,000 new jobs. Nearly 3,000 more jobs will be available as a result of draftsmen leaving the State's labor force during the forecast period. Business services, particularly private drafting firms, and miscellaneous engineering and architectural services will be the major sources of new job opportunities. Construction and the aerospace group of manufacturing industries are also expected to contribute a moderate number of new job opportunities, as well as being a good source for replacement jobs as they occur.

Representative DOT Titles in This Category

DRAFTSMAN, ARCHITECTURAL (profess. & kin.) 001.281
DRAFTSMAN, CIVIL (profess. & kin.) 005.281
DRAFTSMAN, COMMERCIAL (profess. & kin.) 017.281
DRAFTSMAN, DETAIL (profess. & kin.) 017.281
DRAFTSMAN, ELECTRICAL (profess. & kin.) 003.281
DRAFTSMAN, MAP (profess. & kin.) 017.281
DRAFTSMAN, MARINE (profess. & kin.) 014.281
DRAFTSMAN, MECHANICAL (profess. & kin.) 007.281
DRAFTSMAN, STRUCTURAL (profess. & kin.) 005.281
DRAFTSMAN, TOPOGRAPHICAL (profess. & kin.) 017.281
DESIGN DRAFTSMAN, ELECTROMECHANISMS (profess. & kin.) 017.281
PHOTOGRAMMETRIST (profess. & kin.) 018.281

Opportunities for Special Worker Groups

Applicants for jobs as draftsmen should have two years of training in drafting technology, pre-engineering, or a related curriculum in a junior college or vocational school. High school graduates with a strong mechanical drawing background may begin as a drafting aid or tracer and become a journeyman draftsman after several years' experience. Most draftsmen become proficient in a speciality - such as mechanical drafting either by taking special courses in junior colleges or by on-the-job training. Age has little bearing on job opportunities in this occupation, although younger people are preferred for entry-level jobs. Women comprise less than 10 percent of the draftsmen in California.

During early 1969, a shortage of qualified draftsmen was reported in several California labor market areas, including Los Angeles-Long Beach, San Francisco-Oakland and San Jose.

Related California Occupational Guides

Draftsman, No. 336; Draftsman, (Electronics Industry), No. 258; Draftsman: Architectural, Electrical, Marine, Mechanical, Structural, No. 48; Draftsman, Civil Engineering and Related, No. 94.

Technicians, Other

Job Outlook

Employment in these occupations increased rapidly from an average of about 58,000 in 1960 to almost 96,000 in 1968. An average of 132,000 are expected to be employed in 1975, creating more than 45,000 new job opportunities. Technicians in these occupations who leave the State's labor force during the 1968-1975 forecast period will account for an additional 8,000 job opportunities.

The aerospace group of manufacturing industries, particularly electrical machinery and aircraft manufacturing, will be the major source of job opportunities. Technicians will also find many opportunities in the construction industry, miscellaneous business services, and government. Opportunities will also be available, although in lesser number, in many other California industries.

Representative DOT Titles in This Category

Technicians, Electrical and Electronic:	ELECTRONICS MECHANIC (any ind.) 828.281 ELECTRICAL TECHNICIAN (profess. & kin.) 003.181 ELECTRONIC TECHNICIAN (profess. & kin.) 003.181 SOUND MIXER (mot. pic.; phono; radio & TV broad.) 194.282 VIDEO OPERATOR (radio & TV broad.) 957.282
Technicians, Other Engineering and Physical Sciences:	LABORATORY TESTER I (any ind.) 029.281 ENGINEERING ASSISTANT, MECHANICAL EQUIPT. (profess. & kin.) 007.181 LABORATORY ASSISTANT (light, heat, power) 029.381 ELECTROMECHANICAL TECHNICIAN (inst. & app.) 710.281 LABORATORY TECHNICIAN (auto. mfg.) 019.381 LIGHT TECHNICIAN (radio & TV broad.) 019.381 RADIOGRAPHER (any ind.) 199.381
Technicians, n.e.c.:	SYSTEMS ANALYST, BUS.-ELEC.-DATA PROCESSING (profess. & kin.) 012.168 BIOLOGICAL AID (agric.) 049.384

Opportunities for Special Worker Groups

Most entry-level jobs in the engineering and physical science technologies require that the applicant be either a junior college graduate or have at least two years of college training, preferably in physical science or engineering. Some qualifying job training, such as that for radar specialists, can be obtained while in military service. Some two-year technical institutes also offer training programs in these specialities. Women comprise only about 15 percent of the employment in these occupations.

During early 1969, a shortage of systems analysts was reported in several of the State's major labor market areas. Federally funded MDTA projects to train engineering aides have been established.

Related California Occupational Guides

Broadcast Technicians, No. 359; Data Processing Equipment Technician, No. 308; Electronics Technician, Nos. 41 and 60; Laboratory Assistant, No. 201; Nuclear Technician, No. 379; Radiographer, No. 279; Research and Development Technician, No. 273; Technician, Engineering and Physical Science, No. 355.

Nurses, Professional

Job Outlook

Nursing is one of the most rapidly growing professions. From an average of about 52,000 in 1960, the number of jobs increased to 84,000 in 1968. An average of 107,000 is projected for 1975. In addition to the 23,000 new jobs which will be created over the seven-year forecast period, 17,000 jobs will need to be filled to replace professional nurses who will have left the State labor force by mid-1975.

Although a small number of job opportunities will be found in most industries, more than nine out of ten professional nurses in California are employed in medical services. Educational services, and nonprofit institutions will also need significant numbers of registered nurses.

Representative DOT Titles in This Category

DIRECTOR, NURSING SERVICE (med. ser.) 075.118
NURSE, ANESTHETIST (med. ser.) 075.378
NURSE, CONSULTANT (med. ser.) 075.128
NURSE, GENERAL DUTY (med. ser.) 075.378
NURSE, HEAD (med. ser.) 075.128
NURSE, INSTRUCTOR (med. ser.) 075.128
NURSE, OFFICE (med. ser.) 075.378
NURSE, STAFF, OCCUPATIONAL HEALTH NURSING (med. ser.) 075.378
NURSE, STAFF, PUBLIC HEALTH (med. ser.) 075.128

Opportunities for Special Worker Groups

All but about three percent of professional nurses are women. In addition to the large number of jobs being created by expansion of medical services are relatively large replacement needs caused in part by the high retirement rates, which are characteristic of occupations where women comprise most of the employed.

General duty registered nurses are presently in short supply in every major labor market area of the State. This situation is likely to continue, because of the long and exacting training requirements for this profession.

Related California Occupational Guides

Nurse, Professional (Hospitals and Related Institutions), No. 29; Nurse, Professional (Industrial and Office), No. 43; Occupational Health Nurse, No. 328; Public Health Nurse, No. 14.

Physicians and Surgeons, Osteopaths

Job Outlook

The number of medical doctors in California is growing at a much faster rate than the population, as members of a relatively affluent society demand more medical care. From an average of 25,000 in 1960, the number of jobs in this category increased to 40,000 in 1968, and will average 50,000 by 1975. In addition to the 10,000 new job opportunities from industrial expansion, over 5,000 more MD's will be needed to replace those who will have left the State's labor force during the seven-year forecast period.

Nearly all California physicians are in the medical services industry, except for a few who are employed in public and nonprofit institutions, and an even smaller number who are scattered among other industries.

Representative DOT Titles in This Category

ANESTHIOLOGIST (med. ser.) 070.108
CARDIOLOGIST (med. ser.) 070.108
GENERAL PRACTITIONER (med. ser.) 070.108
GYNECOLOGIST (med. ser.) 070.108
INTERN (med. ser.) 070.108
MEDICAL OFFICER (gov. ser.) 070.108
NEUROLOGIST (med. ser.) 070.108
OBSTETRICIAN (med. ser.) 070.108
OPTHALMOLOGIST (med. ser.) 070.108
OSTEOPATHIC PHYSICIAN (med. ser.) 071.108
PATHOLOGIST (med. ser.) 070.081
PEDIATRICIAN (med. ser.) 070.108
PSYCHIATRIST (med. ser.) 070.108
RADIOLOGIST (med. ser.) 070.108
SURGEON (med. ser.) I 070.101

Opportunities for Special Worker Groups

Extremely long preparation coupled with the limited capacities of California Medical schools makes certain a continued shortage of physicians. Fewer than one out of ten medical doctors are women. In California, Osteopathic physicians who meet state licensing requirements are professionally equivalent to other physicians.

Related California Occupational Guide

Doctor of Medicine, No. 319.

Technicians, Medical and Dental

Job Outlook

This category is among the State's fastest growing group of occupations. From an average of 22,000 in 1960, jobs for medical and dental technicians more than doubled by 1968 when they averaged over 46,000. Projections for 1975 indicate that this very rapid growth rate will continue. An estimated 73,000 jobs for technicians will be needed by that time. In addition to the more than 26,000 new jobs created by expansion of medical services there will be another 7,000 jobs to replace technicians who will have left the State's work force during the seven-year forecast period.

About 95 percent of all jobs in this field will be in the medical services industry. Most of the remaining opportunities will be in educational services, in government, and in the instrument manufacturing industry.

Representative DOT Titles in This Category

BIOCHEMISTRY TECHNOLOGIST (med. ser.) 078.281
DENTAL HYGIENIST (med. ser.) 078.368
DENTAL-LABORATORY TECHNICIAN (med. ser.) 712.381
ELECTROCARDIOGRAPH TECHNICIAN (med. ser.) 078.368
ELECTROENCEPHALOGRAPH TECHNICIAN (med. ser.) 078.368
LABORATORY ASSISTANT, PLASMA DRAINING-OFF (drug prep.; med. ser.) 078.687
MEDICAL-LABORATORY ASSISTANT (med. ser.) 078.381
MEDICAL TECHNOLOGIST (med. ser.) 078.281
MEDICAL TECHNOLOGIST, CHIEF (med. ser.) 078.168
MICROBIOLOGY TECHNOLOGIST (drug prep.; med. ser.) 078.281
PROSTHETIST-ORTHOTIST (surgical appl.) 078.368
RADIOLOGIC TECHNOLOGIST (med. ser.) 078.368
TISSUE TECHNOLOGIST (med. ser.) 078.381

Opportunities for Special Worker Groups

Women predominate in these occupations, and hold about six out of ten jobs. Because of the diversity of the category, formal preparation varies a great deal. To practice in California a dental hygienist, for example, must complete a two-year curriculum in an approved school of dental hygiene and be licensed by the State Board of Dental Examiners. In contrast, most dental technicians acquire their skills by completing three to five years of on-the-job training.

During early 1969, general shortages of medical technicians existed in major California labor market areas.

Related California Occupational Guides

Dental Hygienist, No. 155; Dental Technician, No. 243; Medical Technologist (Bioanalyst), No. 17; X-ray Technologist, Medical, No. 89.

Teachers, Elementary

Job Outlook

Elementary school teachers comprise the largest group in the teaching profession. The very rapid growth of this category, from an average of under 85,000 in 1960 to 128,000 in 1968 will not be maintained during the forecast period. An average of 140,000 elementary school teachers is anticipated by 1975 for an increase of 12,000 during the seven-year period. In addition, over 22,000 elementary teachers will be needed to replace those who leave the labor force over the forecast period.

By 1975, about 99 percent of the elementary school teachers will be in the educational services industry. Nearly all of the remainder will be in nonprofit industries.

Representative DOT Titles in This Category

PRINCIPAL, ELEMENTARY SCHOOL (education) 091.118
TEACHER, ELEMENTARY SCHOOL (education) 092.228
TEACHER, KINDERGARTEN (education) 092.228

Opportunities for Special Worker Groups

About eight out of ten elementary school teachers are women. Educational requirements are exacting. Regular elementary teachers in California must now possess, when hired, a standard elementary credential. This requires a bachelor's degree, plus 30 units in graduate courses, plus student teaching. However, some counties grant provisional credentials to those who have not yet met all the requirements.

Related California Occupational Guide

Teacher, Elementary (Public Schools), No. 10.

Teachers, Secondary

Job Outlook

The number of jobs in California for secondary school teachers have grown very rapidly. The average of about 52,000 jobs in 1960 increased to 92,000 in 1968. By 1975 there will be a need for an average of 118,000 secondary teachers, an increase of more than 25,000 over the seven-year forecast period. In addition, an estimated 12,000 teachers will be needed to replace those who leave the State's labor force over the forecast period.

Nearly all secondary teachers in California will continue to be employed in the educational services industry.

Representative DOT Titles in This Category

AUDIOVISUAL SPECIALIST (education) 099.168
HEADMASTER (education) 091.118
INSTRUCTOR, AUTO DRIVING (education) 099.228
INSTRUCTOR, TYPING (education) 091.228
PRINCIPAL, HIGH SCHOOL (education) 091.118
SUPERINTENDENT, SCHOOLS (education) 091.118
TEACHER, AGRICULTURE (education) 091.228
TEACHER, ENGLISH (education) 091.228
TEACHER, INDUSTRIAL ARTS (education) 091.228
TEACHER, SECONDARY SCHOOL (education) 091.228
TEACHER, SPEECH (education) 091.228

Opportunities for Special Worker Groups

Career opportunities for teachers in California secondary schools are ordinarily open only to those who meet rigorous educational requirements, including post-graduate college work.

The standard California General Secondary credential is the normal requirement for secondary teachers. Provisional or temporary credentials are sometimes granted to persons with only the bachelor's degree only if regularly certified teachers cannot be found.

More men are employed as secondary school teachers than in the primary grades, but nearly six out of ten of these jobs are filled by women.

Related California Occupational Guides

Teacher, General Secondary, No. 57; Teacher of Agriculture, No. 387.

Teachers, Other Except College

Job Outlook

Although still the smallest of the teacher group, this category is growing at the fastest rate. From an average of about 16,000 jobs in 1960, other teachers except college increased to 29,000 by 1968. There should be jobs for 54,000 by 1975. Trade schools and remedial training programs for adults are growing rapidly as more government aid is directed into such channels.

Industrially, this category is represented among a broader group of industries than are the other teacher groups. However, more than half will still be in educational services by the end of the forecast period. Significant numbers will be in nonprofit institutions, in government, and in motion picture and miscellaneous entertainment. A few miscellaneous teachers will be employed in various manufacturing industries, in trade, auto repairing, and medical services.

Representative DOT Titles in This Category

Many teachers and other faculty of special schools have the same occupational titles as secondary school teachers in public schools.

DIRECTOR, EXTENSION WORK (education) 090.118
HEADMASTER (education) 091.118
INSTRUCTOR, CORRESPONDENCE SCHOOL (education) 099.228
INSTRUCTOR, COSMETOLOGY (education) 097.228
INSTRUCTOR, JUDO (education) 153.228
INSTRUCTOR, VOCATIONAL TRAINING (education) 097.228
TEACHER, ADULT EDUCATION (education) 099.228
TEACHER, COMMERCIAL (education) 091.228
TEACHER, INDUSTRIAL ARTS (education) 091.228
TEACHER, NURSERY SCHOOL (any ind.) 359.878
TEACHER, STENOGRAPHY (education) 091.228

Opportunities for Special Worker Groups

More than six out of every ten jobs in this category are held by women. Teaching opportunities are increasing for those who are exceptionally proficient in their vocation and who can teach their skills to others. Highly talented individuals who excel in recreational activities often become professional teachers of their speciality.

Related California Occupational Guides

Coach, No. 248; Teacher of Agriculture, No. 387; Teacher of Handicapped Children (Teacher of Exceptional Children), No. 110; Teacher in Early Childhood Education, No. 275; Trade and Technical Teacher, No. 404; Vocational Business Education Teacher, No. 398.

Teachers, College

Job Outlook

Jobs for college teachers doubled over the period from 1960 to 1968. By 1975 they should nearly double again, to 57,000. In addition to the estimated 17,000 new job opportunities over the forecast period there will be 5,000 more jobs to replace faculty members who leave the labor force during the seven-year period.

There is but a single industrial category for all college teachers. All of them are in educational services.

Representative DOT Titles in This Category

College faculty members may be designated according to their specialized discipline.

DIRECTOR OF INSTITUTIONAL RESEARCH (education) 090.168
FACULTY MEMBER, COLLEGE OR UNIVERSITY (education) 090.228
GRADUATE ASSISTANT (education) 090.999
PRESIDENT, EDUCATIONAL INSTITUTION (education) 090.118
TEACHER, JUNIOR COLLEGE (education) 090.228

Opportunities for Special Worker Groups

Approximately eight out of every ten college teachers are men. Many years of academic preparation with outstanding scholastic achievement is usually required of the potential faculty member. As the exceptionally large cohort of individuals born during the years immediately following World War II enters college, teaching opportunities for faculty members will increase. Also, a larger proportion of individuals will require college level training to meet tomorrow's manpower needs.

Related California Occupational Guide

Teacher, Junior College (Public Schools), No. 189.

Accountants and Auditors

Job Outlook

During the period from 1960 to 1968 employment of accountants and auditors increased by about 13,000 to an average of 63,000. Projections indicate a further increase to more than 70,000 by 1975. Along with the 7,500 new jobs from industrial expansion, there will be over 9,000 additional opportunities resulting from accountants and auditors leaving the State's labor force between 1968 and 1975.

Qualified accountants and auditors will find job opportunities in practically every California industry. The miscellaneous services industry, which includes accounting, auditing, and bookkeeping services, will provide more opportunities than any other single industry. There will also be substantial opportunities for these specialists in government, trade, finance, and manufacturing.

Representative DOT Titles in This Category

ACCOUNT ANALYST (banking) 219.388
ACCOUNTANT (profess. & kin.) 160.188
ACCOUNTANT, BUDGET (profess. & kin.) 160.188
AUDITOR (profess. & kin.) 160.188
REVENUE AGENT (gov. serv.) 188.168

Opportunities for Special Worker Groups

Accountants and auditors generally enter their profession by successfully completing the accountant degree requirements in four year colleges, special accounting schools, private business schools, or correspondence schools. The job seeker must hold a CPA certificate before he can be considered for most accounting jobs. At present eight out of every ten of these jobs are held by men.

Related California Occupational Guides

Certified Public Accountant, No. 171; Junior Accountant, No. 1.

Artists, Athletes, and Entertainers

Job Outlook

Aggregate employment in this diverse group of occupations grew from 61,000 in 1960 to an average of nearly 90,000 in 1968. California employment needs will average about 108,000, by 1975, thus providing 18,000 new jobs over the forecast period. An additional 13,000 job opportunities will become available during the next seven years to replace individuals leaving the labor force.

Job opportunities will be concentrated in the service industries. Educational services, motion pictures, nonprofit establishments, and miscellaneous services will provide major proportions of the total. Opportunities for graphic and commercial artists, for example, will be concentrated in aircraft manufacturing and printing firms, while some musicians will find job opportunities with eating and drinking establishments.

Representative DOT Titles in This Category

Actors and Actresses:	ACTOR (amuse. & rec.) 150.048 TEACHER, DRAMA (education) 150.028
Artists and Art Teachers:	ART LAYOUT MAN (print. & pub.) 141.081 PAINTER (profess. & kin.) 144.081 MEDICAL ILLUSTRATOR (medical ser.) 141.081
Authors:	LITERARY WRITER (profess. & kin.) 130.088 COLUMNIST (print. & pub.) 132.068 REPORTER (print. & pub.) 132.268
Athletes:	ATHLETE (amuse. & rec.) 153.348 JOCKEY (amuse. & rec.) 153.248
Dancers and Dancing Teachers:	DANCER (amuse. & rec.) 151.048 INSTRUCTOR, DANCING (education) 151.028
Entertainers:	DISK JOCKEY (radio & TV broad.) 159.148 STUNT MAN (amuse. & rec.) 159.348
Musicians:	MUSICIAN, INSTRUMENTAL 152.048
Sports Instructors and Officials:	UMPIRE (amuse. & rec.) 153.268

Opportunities for Special Worker Groups

For nearly all of these occupations, talent, skill, and public acceptance are the only criteria. California is increasingly a magnet for those with career goals in entertainment and recreation. Because of irregular employment patterns for all but a few outstanding performers, a chronic and persistent surplus of entertainers exists in California.

Related California Occupational Guides

Artist - Animation, No. 215; Baseball Player Professional, No. 343; Commercial Artist, No. 4; Copy Writer, No. 163; Disk Jockey, No. 126; Musician, Instrumental, No. 301; Professional Athlete - Golfer, No. 376; Reporter, No. 113; Ski Instructor, No. 401; Technical Writer, No. 120.

Clergymen

Job Outlook

During the eight-year period from 1960-1968 the number of jobs for clergymen in California increased by nearly 4,000 to a 1968 average of nearly 17,000. The forecast for 1975 projects a need for nearly 19,000, an increase of nearly 2,000 for the seven-year period. Nearly 3,000 additional clergymen will be needed to replace those leaving the profession during the forecast period.

Nearly all the demand for clergymen will be as members of religious organizations. In addition to these, a few clergymen will be needed by educational and medical institutions, mostly in a replacement capacity.

Representative DOT Title in This Category

CLERGYMAN (profess. & kin.) 120.108

Opportunities for Special Worker Groups

Educational preparation for clergymen usually covers a much wider range of subjects than that of most other professions. Within the Protestant church, some religious groups have no formal educational requirements. Other religious groups ordain ministers with various training in liberal arts colleges, Bible colleges, or institutes. Many now require a three-year professional study course in theology following college graduation. In the Jewish faith, a Rabbi usually has from four to six years of graduate study in a Rabbinical seminary depending upon the branch of Judaism. Roman Catholic priests are required to complete eight years of post-high school seminary study. Thus, with few exceptions, preparation for the clergy requires many years of study.

More than 95 percent of clergymen in California are men.

Designers Exc. Design Draftsmen

Job Outlook

A need for nearly 16,000 designers is forecast for 1975, an increase of about 3,000 jobs above the average 1968 figure. During the forecast period, another 1,500 designers will be needed to replace those leaving the labor force for various reasons.

The majority of the demand will stem from the service sector, particularly business and miscellaneous services, where private design and architectural consulting firms are principal employers. The manufacturing industries, particularly machinery, electrical machinery, and apparel, and the construction industry will offer most of the remaining job opportunities for designers.

California, which had more than 12 percent of the nation's designers in 1960, should increase its proportionate representation by 1975. A very diverse group of occupations are represented in this category. While the industrial design groups apply engineering skills, other groups use their varied talents to create artistic effects.

Representative DOT Titles in This Category

CLOTHES DESIGNER (profess. & kin.) 142.081
COMMERCIAL DESIGNER (profess. & kin.) 142.081
FIXTURE DESIGNER (furn.) 142.081
FLORAL DESIGNER (ret. trade) 142.081
FORM DESIGNER (print. & pub.) 970.281
FURNITURE DESIGNER (furn.) 142.081
INDUSTRIAL DESIGNER (profess. & kin.) 142.081
INTERIOR DESIGNER AND DECORATOR (profess. & kin.) 142.051
STAGE-SCENERY DESIGNER (amuse. & rec.) 142.081
SIGN DESIGNER (signs) 142.081
TOY DESIGNER (toys & games) 142.081
ENGINEERING DESIGNER, AIRCRAFT STRUCTURES (aircraft mfg.) 002.081

Opportunities for Special Worker Groups

While men comprise eight out of ten persons employed in these occupations, opportunities for qualified women should increase. Most of these occupations require two or more years of formal training, either in an art school or in college. Some specialities require a great deal more formal education. Those who aspire to careers as designers should expect to follow their school training with on-the-job training before they become fully qualified.

During early 1969, California labor markets reported a general shortage of qualified tool designers. At the same time, however, a surplus of clothes designers and interior decorators also exists.

Related California Occupational Guides

Floral Designer, No. 350; Interior Designer, No. 189; Women's Clothing Designer, No. 185.

Lawyers and Judges

Job Outlook

The number of lawyers and judges in California is expected to increase by over 3,000 during the 1968-1975 forecast period, increasing to about 28,000 in 1975 from the 1968 average of around 25,000. An additional 4,000 lawyers and judges will be required to replace those leaving the State's labor force during the forecast period.

Most of the job opportunities for attorneys will be either in establishments offering legal services or in private law practice. A significant number of opportunities will also be found in government service. A few jobs will be available for corporation attorneys in various industries.

Representative DOT Titles in This Category

SOLICITOR, CITY OR STATE (gov. serv.) 110.118
DISTRICT ATTORNEY (gov. serv.) 110.118
BAR EXAMINER (profess. & kin.) 110.168
MAGISTRATE (gov. serv.) 111.118
JUDGE (gov. serv.) 111.118
TAX ATTORNEY (profess. & kin.) 110.118
TITLE ATTORNEY (profess. & kin.) 110.118
LAWYER (profess. & kin.) 110.108
LAWYER, CORPORATION (profess. & kin.) 110.118
LAWYER, CRIMINAL (profess. & kin.) 110.108
LAWYER, PATENT (profess. & kin.) 110.118
LAWYER, PROBATE (profess. & kin.) 110.118
LAWYER, REAL ESTATE (profess. & kin.) 110.118

Opportunities for Special Worker Groups

Few, if any opportunities in the field of law will be available except for those with appropriate training. As a rule, seven years of full-time study after high school are necessary to complete the required college and law school work. The usual preparation for attorneys is four years of college study followed by three years of law school. Then the graduate must pass the California Bar examination which permits him to practice law in the State. Judges and District Attorneys are lawyers who have either been appointed or elected to their positions. Only about five percent of California's lawyers and judges are women.

Related California Occupational Guide

Lawyer, No. 322.

Librarians

Job Outlook

A need for more than 16,000 librarians is forecast for 1975. This represents an increase of nearly 3,000 jobs from the 1968 average of 13,000, and is nearly double the 1960 figure of 8,000. Replacement demands for those leaving the State's labor force during the 1968-1975 forecast period will be about equal to the expansion opportunities. Thus, over 5,000 additional librarians will be needed in California between 1968 and 1975.

Educational services, including public libraries and college, elementary, and secondary school libraries, will be the major source of job opportunities. Nonprofit organizations and certain business service establishments are also expected to exhibit an increased demand. The remaining industries will have few opportunities for these specialists during the forecast period.

Representative DOT Titles in This Category

BIBLIOGRAPHER (profess. & kin.) 100.288
BOOKMOBILE LIBRARIAN (library) 100.168
CATALOGER (library) 100.388
CHILDREN'S LIBRARIAN (library) 100.168
LIBRARIAN (library) 100.168
FILM LIBRARIAN (library) 100.168
LIBRARIAN, SPECIAL COLLECTIONS (library) 100.168
LIBRARIAN, REFERENCE LIBRARY (library) 100.168
MUSIC LIBRARIAN (radio & TV broadcasting) 100.388
PATIENTS LIBRARIAN (library) 100.168

Opportunities for Special Worker Groups

The usual requirement for a professional librarian is the completion of a course of study in a graduate library school. This usually means at least five years of college - four years for the bachelor's degree and one year of specialized study in library science. About eighty percent of the librarians in California are women.

A shortage of librarians exists in most of California's major labor market areas at the present time.

Related California Occupational Guides

Librarian, No. 154; Medical Record Librarian, No. 134.

Personnel and Labor Relations Workers

Job Outlook

California employment in this occupational group increased rapidly from about 12,000 in 1960 to an average of just over 17,000 in 1968, and is expected to continue increasing to around 22,000 during 1975. Complementing the 5,000 opportunities from industrial expansion will be another 2,500 jobs resulting from people in these occupations leaving the State's labor force during the forecast period.

These job opportunities will occur in many of California's industries. The service sector, especially government service, as well as educational, medical, and business services will create the greatest demand. Personnel workers will also be needed by financial and insurance companies and aerospace firms.

Representative DOT Titles in This Category

CONCILIATOR (profess. & kin.) 169.118
EMPLOYMENT INTERVIEWER (profess. & kin.) I 166.068
DIRECTOR, INDUSTRIAL RELATIONS (profess. & kin.) 166.118
JOB ANALYST (profess. & kin.) 166.088
LABOR-RELATIONS SPECIALIST (profess. & kin.) 169.118
POSITION CLASSIFIER (gov. serv.) 166.088
PLACEMENT OFFICER (education) 166.268
SALARY AND WAGE ADMINISTRATOR (profess. & kin.) 169.118
DIRECTOR, EDUCATIONAL (education) 166.118

Opportunities for Special Worker Groups

As is the case with most professional occupations, a college education is becoming increasingly important for entrance into personnel work. The best way to enter this field is with a degree in either personnel administration or liberal arts. Retired military men with administrative or personnel experience may find opportunities in government service. Women fill about forty percent of the jobs in these occupations.

Related California Occupational Guides.

Employment Interviewer, No. 38; Job Analyst (Wage and Salary Administration), No. 238; Labor Relations Man (In Industry), No. 297; Personnel Manager, No. 135; Training Director, No. 353.

Social and Welfare Workers, n.e.c.

Job Outlook

The number of jobs in this category increased by over 7,000 between 1960 and 1968, and is expected to increase over the forecast period by another 6,000 from the 1968 average of 20,000. About 3,500 replacement jobs will also become available between 1968 and 1975 as a result of workers leaving the State's labor force.

The majority of the new and replacement jobs will be in State and local government, with nonprofit organizations also showing an increasing need. Medical and educational services will also provide substantial opportunities during the forecast period.

Representative DOT Titles in This Category

CASEWORKER (profess. & kin.) 195.108
FIELD REPRESENTATIVE (profess. & kin.) 189.268
INVESTIGATOR, WELFARE (gov. serv.) 168.168
SOCIAL WORKER, MEDICAL (profess. & kin.) 195.108
PAROLE OFFICER (profess. & kin.) 195.108
PROBATION OFFICER (profess. & kin.) 195.108
SOCIAL WORKER, PSYCHIATRIC (profess. & kin.) 195.108
SOCIAL WORKER, DELINQUENCY PREVENTION (profess. & kin.) 195.108
WELFARE DIRECTOR (gov. serv.) 188.118
CASEWORKER, FAMILY (profess. & kin.) 195.108
CASEWORKER, CHILD WELFARE (profess. & kin.) 195.108

Opportunities for Special Worker Groups

A bachelor's degree, preferably in social welfare, is generally the minimum educational requirement for most beginning jobs in social work. About sixty percent of California's social and welfare workers are women.

During early 1969, applicant shortages of social workers were reported in many California labor market areas.

Related California Occupational Guides

Probation Officer and Parole Agent, No. 192; Social Worker, No. 122.

Professional, Technical Workers, n.e.c.

Job Outlook

The aggregate total for this rapidly expanding category average about 60,000 jobs in 1960, increasing to 108,000 in 1968. By 1975 there will be a projected average of 156,000, for a gain of almost 50,000 jobs over the projection period. Replacement needs from 1968 to 1975 will add another 14,000 jobs. This category includes many new and emerging professions not elsewhere classified.

The greatest number of job opportunities for these workers will be in the educational, business, and nonprofit service industries. Government, communications, the aerospace group of manufacturing industries, and construction will also account for substantial numbers of new jobs. The remainder will be scattered among various other industries.

Representative DOT Titles in This Category

Farm and Home Management Advisors:	COUNTY-AGRICULTURAL AGENT (gov. ser.) 096.128 HOME ECONOMIST, CONSUMER SERVICE (profess. & kin.) 096.128
Foresters and Conservationists:	FOREST-FIRE FIGHTER (gov. ser.) 441.384 FISH CULTURIST (fish.) 041.168 FORESTER (profess. & kin.) 040.081
Funeral Directors and Embalmers:	DIRECTOR, FUNERAL (per. serv.) 187.168
Recreation and Group Workers:	SOCIAL GROUP WORKER (profess. & kin.) 195.108 RECREATION LEADER (profess. & kin.) 195.228
Religious Workers:	CHRISTIAN SCIENCE PRACTITIONER (profess. & kin.) 129.108 MISSIONARY (profess. & kin.) 120.108 PARISH WORKER (profess. & kin.) 129.208
Therapists and Healers, n.e.c.:	MASSEUR (per. serv.) 334.878 MENTAL HEALER (medical serv.) 079.378 PHYSICAL THERAPIST (medical serv.) 079.378
Professional, Technical, and Kindred Workers, n.e.c.:	ANNOUNCER (radio and tv broad.) 159.178 COUNSELOR (profess. & kin.) II 045.108 FINANCIAL ANALYST (profess. & kin.) 020.188 SCIENTIFIC HELPER (profess. & kin.) 199.384
Professional Data Processing Occupations:	PROGRAMMER, BUSINESS (profess. & kin.) 020.188 PROGRAMMER, ENGINEERING AND SCIENTIFIC (profess. & kin.) 020.188

Opportunities for Special Worker Groups

The diversity of this catch-all professional category rules out any generalization. In the aggregate, about three out of four of these jobs are held by men. During early 1969, a shortage of experienced programmers was reported in several major labor market areas.

Related California Occupational Guides

Camp Counselor, No. 303; Embalmer (Mortician), No. 340; Farm Advisor, No. 365; Financial Analyst, No. 260; Forest-Fire Fighter, No. 334; Home Economist in Business, No. 212; Landscape Architect, No. 216; Physical Therapist, No. 117; Production Planner, No. 271; Programmer, No. 81; Public Relations Man, No. 276; Radio and T.V. Announcer, No. 390; Recreation Leader, No. 357; Rehabilitation Counselor, No. 430; School Counselor, No. 429; Translators and Interpreters, No. 408; Wood Technologist, No. 229.

Job Outlook

California employment in this rapidly growing occupation increased from about 5,000 in 1960 to an average of over 9,000 in 1968. The forecast for 1975 indicates a further rapid increase to about 13,000. Another 1,000 jobs will need to be filled to replace creditmen leaving the State's labor force during the seven-year forecast period.

These positions occur within many of the industries comprising the California economy. Banks, credit agencies, and other investment and loan agencies will be the major sources of jobs. The wholesale trade and general merchandising industries will also provide many employment opportunities. In addition, automobile dealers and the business and medical services industries will be the source for a moderate number of opportunities.

Representative DOT Title in This Category

MANAGER, CREDIT AND COLLECTION (any ind.) 168.168

Opportunities for Special Worker Groups

Although educational requirements vary among employers, most young people entering this occupation should have a college education, preferably in business administration. In some cases, bright young high school graduates are considered for these positions, and given the necessary training by their employer. About 30 percent of the jobs in this occupation are held by women. As credit institutions serving consumers are expected to continue expanding, shortages of qualified creditmen may develop during the forecast period.

Related California Occupational Guide

Credit and Collection Manager, No. 132.

Purchasing Agents

Job Outlook

The employment of purchasing agents in California grew from over 14,000 in 1960 to an average of about 21,000 in 1968. The expectation for 1975 is a further increase to about 27,000. In addition to the 6,000 opportunities from industrial expansion there will be nearly 3,000 jobs resulting from replacement needs for people leaving the State's labor force during the 1968-1975 forecast period.

Industrially, job opportunities in these occupations will be widely distributed among many California industries. Wholesale trade, the aerospace group of manufacturing industries, and business services are expected to provide many opportunities. Medical services and food products industries, as well as the federal and State governments will also offer substantial opportunities.

Representative DOT Titles in This Category

BUYER, LIVESTOCK (ret. tr.; slaughter & meat packing; whole. tr.) 162.158
BUYER, FISH (can. and preserv.) 162.158
BUYER, AGRICULTURAL PRODUCE (whole. tr.) 162.158
PIECE-GOODS BUYER (garment) 162.158
PURCHASING AGENT (any ind.) 162.158
PURCHASING STEWARD (hotel & rest.) 162.158
SUPPLY REQUIREMENTS OFFICER (gov. serv.) 162.158

Opportunities for Special Worker Groups

A college education has become increasingly important for entry into these occupations. Employers prefer to hire college graduates with degrees in business administration or engineering. However, some firms still prefer to bring employees who are familiar with the company's operations up from the ranks to fill these jobs. Only about ten percent of the purchasing agents in California are women.

In early 1969, several California labor market areas reported a surplus of job applicants in this category. The only exception is in the aerospace industries, which require their purchasing agents to know how to negotiate government contracts. Purchasing agents with these skills are not in surplus.

Related California Occupational Guides

Buyer, No. 118; Purchasing Agent, No. 266.

Managers, Officials, Proprietors, n.e.c.

Job Outlook

This extremely large and diverse category is growing steadily. The number of jobs will increase from an average of 875,000 in 1968 to over one million by 1975. Thus, more than one of every ten of the State's employed workers will be in this category. In addition to the 130,000 new jobs created by industry growth will be 150,000 jobs to replace managers, officials and proprietors who will have left the State's labor force over the seven-year forecast period.

The largest number of job opportunities, over 110,000, will be in trade. Over 57,000 job opportunities will be in the service industries; 50,000 in finance, insurance and real estate; 35,000 in construction; and 28,000 in manufacturing. The remaining 33,000 jobs will be in other industries.

Representative DOT Titles in This Category

Buyers and Department Heads, Store:	BUYER (ret. tr.; whole. tr.) II 162.158
	MANAGER, SALES (any ind.) 163.118
	MANAGER, STORE (ret. tr.) I 185.168
	BROKER (ret. tr.; whole. tr.) 162.158
Inspectors, Administration:	BUILDING INSPECTOR (gov. serv.) 168.168
	FOOD AND DRUG INSPECTOR (gov. serv.) 168.287
Managers, Bldg.:	MANAGER, APARTMENT HOUSE (hotel & rest.) 186.168
Officials and Administrators, n.e.c., Public Administration:	ASSESSOR (gov. serv.) 188.188
	CORONER (gov. serv.) 168.168
	EMPLOYMENT INTERVIEWER (profess. & kin.) I 166.268
	MANAGER, CITY (gov. serv.) 188.118
	SUPERINTENDENT, INSTITUTION (any ind.) 187.118
Officials, Lodge, Society, Union, etc.:	BUSINESS AGENT, LABOR UNION (profess. & kin.) 187.118
Managers, Officials, & Proprietors, n.e.c.:	ACCOUNT EXECUTIVE (profess. & kin.) 164.168
	PRESIDENT (any ind.) 189.118
	CONTRACTOR (const.) 182.168
	SUPERINTENDENT, HOSPITAL (med. serv.) 187.118
	MANAGER, RESTAURANT OR COFFEE SHOP (hotel & rest.) 187.168

Opportunities for Special Worker Groups

More than eight out of every ten jobs in this category are held by men. By far the largest number of opportunities will be for proprietors and business managers. Many additional construction contractors will be needed. Officials in all levels of government will be needed both for expansion and to meet replacement needs. Educational requirements are diverse, depending on the specific occupation. Monetary rewards are commensurate with the individual's ability.

During early 1969, store and office managers were listed in surplus in several of the State's major labor market areas.

Related California Occupational Guides

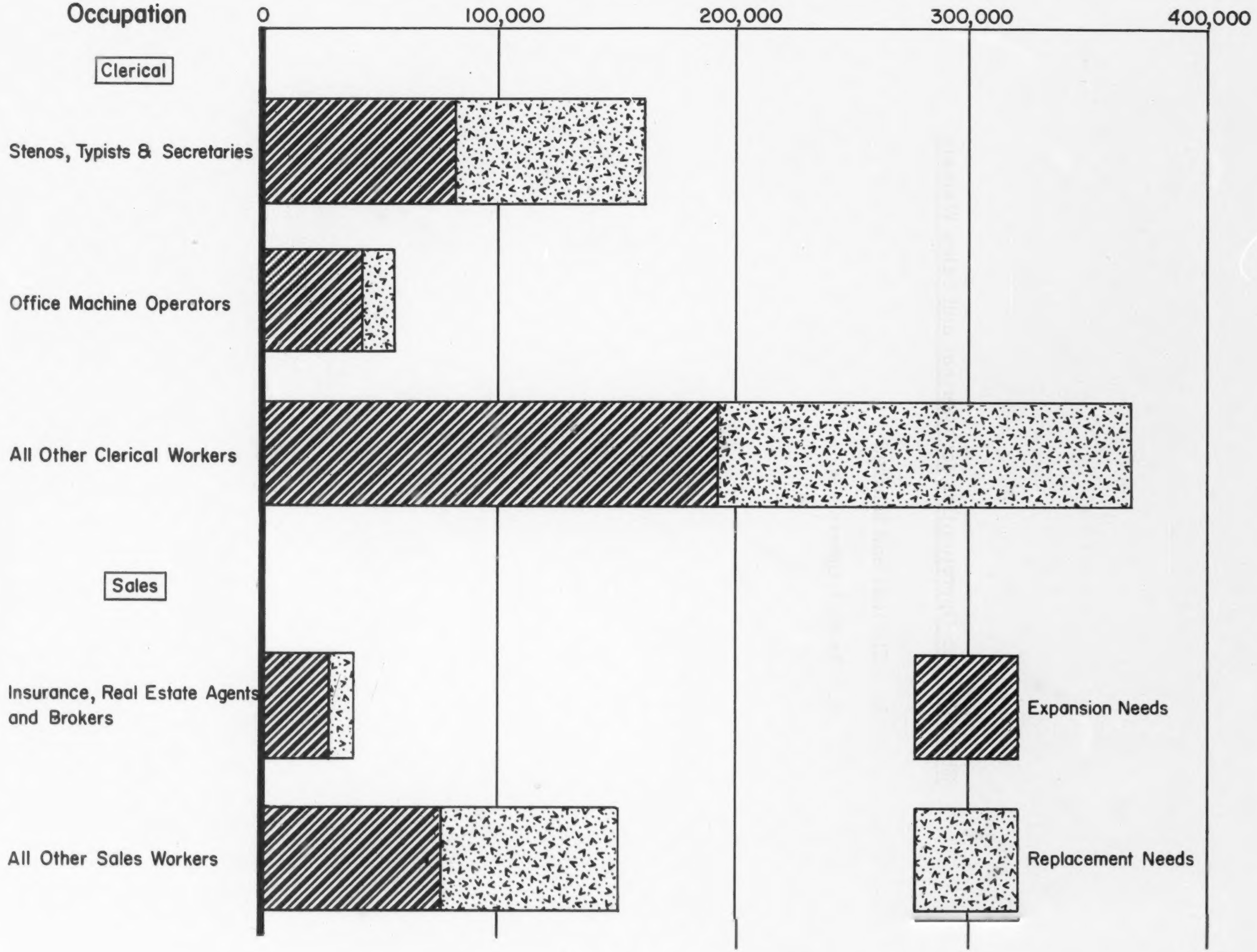
Apartment Manager, No. 423; Building Inspector, No. 306; Business Agent, Labor Union, No. 394; Buyer, No. 118; Chamber of Commerce Manager, No. 293; City Manager, No. 153; Cotton Gin Manager, No. 385; County Agricultural Inspector, No. 378; Deputy Coroner, No. 345; Employment Interviewer, No. 38; Executive Director, No. 130; Hospital Administrator, No. 235; Hotel Manager, No. 114; Plant Quarantine Inspector, No. 221; Retail Store Manager, No. 242.

Chart C. Job Opportunities for Clerical and Sales Workers

3. Clerical and Kindred
4. Sales Workers

Chart C. Job Opportunities for Clerical and Sales Workers

Total Number of Jobs from Industrial Expansion and from Replacement Needs, 1968-1975



3. Clerical and Kindred

Highlights

Even with the increase of automated processes, the avalanche of paper work is certain to continue. About 580,000 jobs will have to be filled in the clerical occupations between mid-1968 and mid-1975.

Leading the list of specific clerical occupations are the stenographers, typists, and secretaries, with nearly 160,000 job opportunities. Over half of all clerical jobs, however, will be in the catchall group described as clerical and kindred workers, n.e.c. Within this group, the largest number of job openings will be in the rapidly growing service industry, where nearly 95,000 jobs will need to be filled by 1975. Almost 45,000 miscellaneous clerical jobs will be in trade, nearly 35,000 in manufacturing, and more than 25,000 in the transportation, communications and utilities industry. This last figure does not include the estimated 15,000 jobs for telephone operators, most of which are also in the communications industry. Another 25,000 miscellaneous clerical workers will be needed in government administration.

Among the other detailed occupational categories for clerical workers, more than 50,000 jobs will be for office machine operators, over 37,000 for cashiers, and more than 32,000 for hand bookkeepers. Thus, clerical occupations will offer very promising career opportunities for the largest group of new workers. Many of these may be trained in relatively short periods of time. Among these, there should be many job opportunities for large numbers of women who are not presently in the State's labor force.

4. Sales Workers

Highlights

By far the largest share of the expected 185,000 job opportunities in this category will be in trade, where nearly 120,000 sales workers will be needed. Many of these jobs require relatively short periods of training, and may be filled increasingly by younger workers who presently possess limited skills. Nearly 40,000 jobs for real estate operators and insurance men will have to be filled by mid-1975. Many older workers may find opportunities for second careers in these occupations.

See pages immediately following for additional detail about selected clerical and sales occupations.

Stenographers, Typists, and Secretaries

Job Outlook

Employment in this group of occupations, which averaged about 355,000 in 1968, will increase to an estimated 435,000 by 1975. Added to the nearly 80,000 new jobs from industrial expansion are an equal number to replace workers in these occupations who will leave the State's labor force during the seven-year period.

These jobs may be found in nearly every California industry. Opportunities will be plentiful in service industries, particularly business, educational, legal, and medical services; in finance, and in government.

Representative DOT Titles in This Category

Stenographic:	COURT REPORTER (clerical) 202.388
	SCRIPT CLERK (motion pic.) 969.368
	STENOGRAPHER (clerical) 202.388
	STENOGRAPHIC-POOL SUPERVISOR 209.138
Typing:	CLERK-TYPIST (clerical) 209.388
	TELEGRAPHIC - TYPEWRITER OPERATOR (clerical) 203.138
	TRANSCRIBING - MACHINE OPERATOR (clerical) 208.588
	TYPING SECTION CHIEF (clerical) 203.138
	TYPIST (clerical) 203.588
	VARI-TYPIST (clerical) 203.582
Secretarial:	LEGAL SECRETARY (clerical) 201.368
	MEDICAL SECRETARY (clerical) 201.368
	SECRETARY (clerical) 201.368

Opportunities for Special Worker Groups

Nearly all job opportunities in this numerically large group of occupations will be filled by women. Many entry level jobs will be available to high school and junior college graduates, and to older women re-entering the labor force.

Federally funded MDTA training courses for stenographers and typists are being given in cities throughout the State. During 1969, applicant shortages were reported for many of these occupations, particularly in the larger metropolitan areas.

Related California Occupational Guides

Clerk Typist, No. 20; Court Reporter, No. 162; Legal Secretary, No. 172; Medical Secretary, No. 177; Reprotypist, No. 382; Secretary (clerical), No. 128; Stenographer, No. 25; Typist, Entry, No. 422; Vari-Typist, No. 164.

Office Machine Operators

Job Outlook

This category includes some of the fastest growing occupations in the State's labor force. Employment increased from 44,000 in 1960 to about 81,000 in 1968. By 1975, employment of 120,000 workers in this group is foreseen. An additional 15,000 workers will be needed to replace office machine operators who will leave the labor force during the forecast period.

By far the largest number of new job opportunities will be in the finance, insurance, and real estate industry, where expansion needs alone will require more than 9,000 new machine operators. In wholesale trade, about 4,000 will be needed. Substantial numbers of new workers will have to be hired by business services firms, and in the burgeoning data processing industry.

Representative DOT Titles in This Category

Billing and Mailing Occupations:	ADDRESSING MACHINE OPERATOR (clerical) 234.582 BILLING CLERK (clerical) 219.388 BILLING-MACHINE OPERATOR (clerical) 214.488 ENVELOPE-SEALING-MACHINE OPERATOR (clerical) I 234.885
Data Processing Occupations:	CARD-TAPE-CONVERTER OPERATOR (clerical) 213.382 COLLATOR OPERATOR (clerical) 208.885 CONTROL CLERK, DATA PROCESSING (clerical) II 219.688 KEY-PUNCH OPERATOR (clerical) 213.582 SUPERVISOR, COMPUTER OPERATIONS (clerical) 213.138 TABULATING-MACHINE OPERATOR (clerical) 213.782
Other Office Machine Operators:	CALCULATING-MACHINE OPERATOR (clerical) 216.488 DUPLICATING-MACHINE OPERATOR (clerical) II 207.782 PROOF-MACHINE OPERATOR (banking) 217.388

Opportunities for Special Worker Groups

A high proportion of women is characteristic of this group of occupations. There will be many job opportunities for young women entering the labor force, as well as for older women returning to work after raising their families. Opportunities for men will continue to be concentrated in the office machine occupations which require heavy lifting.

During 1969, federally funded MDTA training courses are being given in California for key-punch operators.

Related California Occupational Guides

Bookkeeping Machine Operator, No. 33; Calculating Machine Operator, No. 127; Computer Operator, No. 299; Electric Accounting Machine Supervisor, No. 351; Key-Punch Operator, No. 16; Proof Machine Operator, No. 100; Tabulating Machine Operator, No. 209.

Bookkeepers, Hand

Job Outlook

This numerically large occupation is growing at about the same rate as the State's labor force. From about 70,000 in 1960, jobs for bookkeepers increased to an average of 87,000 in 1968, and should pass the 100,000 mark in 1975. In addition to the nearly 14,000 new jobs which will be added over the forecast period there will be over 18,000 job opportunities to replace bookkeepers leaving California's work force.

These workers are found in nearly every industry. The greatest number of opportunities will be in finance, real estate, and insurance, and in wholesale trade. Smaller, but substantial opportunities will be found in automobile sales and service, and in miscellaneous services.

Representative DOT Titles in This Category

ACCOUNTING CLERKS (clerical) 219.488
AUDIT CLERK (clerical) 210.388
BOOKKEEPER (clerical) I 210.388
DIVIDEND-DEPOSIT-VOUCHER QUOTER (insurance) 210.488
GENERAL-LEDGER BOOKKEEPER (clerical) 210.388
MONEY COUNTER (ret. tr.; whole. tr.) 211.488
RECONCILEMENT CLERK (banking) 210.388

Opportunities for Special Worker Groups

Nearly nine out of every ten jobs in this category are held by women. As in most occupations with a high female content, the proportion of job opportunities is increased by young women dropping out of the labor force to marry, or to have children.

Federally funded MDTA courses being given in California are not specifically designed for bookkeepers, although courses described as "multiclerical" or as "clerical skills" teach the basic skills required of workers in these jobs.

In early 1969, the supply of bookkeeping clerks exceeded the demand in several California labor market areas.

Related California Occupational Guides

Accounting Clerk, No. 82; Full-Charge Bookkeeper, No. 26.

Bank Tellers

Job Outlook

This occupation increased very rapidly from less than 17,000 in 1960 to nearly 28,000 in 1968. Statewide, the number of jobs for tellers should continue to increase rapidly, to an average of 39,000 by 1975. In addition to the 11,000 opportunities from industrial expansion there will be an estimated 5,000 opportunities during the seven-year forecast period to replace tellers leaving the State's labor force.

This is a one-industry occupation. All job opportunities will be in banks.

Representative DOT Titles in This Category

TELLER (banking) 212.368
TELLER, COLLECTION AND EXCHANGE (banking) 212.368
TELLER, HEAD (banking) 212.138

Opportunities for Special Worker Groups

Although there will be opportunities for both men and women to enter this occupation, more than three out of four jobs will be filled by women. With the continued rapid growth of branch banking, women are replacing men in many banking jobs, particularly that of teller. Opportunities for entry level jobs should continue to be good over the forecast period.

High school graduation is generally the minimum educational requirement to become a teller trainee. Tellers must be bondable, and many employers require applicants to supply references and to have good credit ratings.

In 1969, the East Bay Skill Center is offering MDTA training for Bank Tellers.

Related California Occupational Guides

Credit Union Teller, No. 420; Teller (Banking), No. 109.

Cashiers

Job Outlook

From about 70,000 in 1968, the number of jobs in this rapidly growing category will increase by 25,000 over the seven-year forecast period. Another 12,000 job opportunities for persons not presently in the State's labor force will be needed to meet replacement needs between 1968 and 1975.

More than one-third of all job opportunities in this occupation will be in the retail food industry as grocery checkers. About one out of ten jobs will be in general merchandising, with about the same proportion needed in eating and drinking establishments. The entertainment industries will require a substantial number of cashiers, but fewer than the other industries listed above. The remaining jobs for cashiers will be widely scattered among other industries.

Representative DOT Titles in This Category

CASHIER (clerical) I 211.368
DESK CLERK (per. ser.) 211.468
FLOOR CASHIER (clerical) 211.468
GROCERY CHECKER (ret. tr.) 299.468
PARIMUTUEL-TICKET SELLER (amuse. & rec.) 211.468
TICKET AGENT (any ind.) 919.368
TICKET SELLER (clerical) 211.468
TUBE OPERATOR (clerical) 239.687

Opportunities for Special Worker Groups

Three-fourths of the job opportunities for cashiers will be filled by women if present ratios hold. Despite the bright long-term prospect for cashiers, a surplus of these workers was reported in most areas of the State during early 1969.

Appropriate MDTA training courses were being offered in the East Bay Skill Center during 1969.

Related California Occupational Guides

Cashier, No. 31; Grocery Checker, No. 292; Office Cashier, No. 391.

Mail Carriers and Postal Clerks

Job Outlook

In California the number of jobs for these two groups of postal occupations will increase from an average of 46,000 in 1968 to nearly 53,000 by mid-1975. Most of the 6,500 new jobs will be for carriers. Post Office automation will offset much of the need for additional postal clerks. Replacement needs will be nearly evenly distributed between the two categories, totaling nearly 6,000 over the seven-year forecast period.

All job opportunities will be in the Post Office department of the federal government.

Representative DOT Titles in This Category

Mail Carriers:	MAIL CARRIERS (gov. ser.) 233.388 RURAL-MAIL CARRIERS (gov. ser.) 233.388
Postal Clerks:	FOREMAN, MAILS (gov. ser.) 232.138 POST OFFICE CLERK (gov. ser.) 232.368

Opportunities for Special Worker Groups

Only a relatively small proportion of postal employees are women, nearly all of whom are postal clerks. All jobs are under civil service and only candidates who can pass competitive examinations are hired. Veteran's preference is given for all federal employment.

Related California Occupational Guides

Mail Carrier, No. 413; Post Office Clerk, No. 160.

Shipping and Receiving Clerks

Job Outlook

Growth in this occupation will be nearly at a standstill over the forecast period. The average of about 30,000 jobs in 1968 will be barely maintained in 1975. Nearly all the job opportunities in this category will be for replacement needs, which will amount to nearly 4,000 between 1968 and 1975.

Wholesale trade will offer the largest number of opportunities in this category. Among manufacturing industries, the aerospace complex will require many shipping clerks during the forecast period. General merchandising will also offer a significant number of job opportunities.

Representative DOT Titles in This Category

FOREIGN CLERK (clerical) 219.488
FREIGHT-RECEIVING CLERK (r.r. trans.) 222.387
PLATFORM CLERK (clerical) 222.387
RECEIVING CLERK (clerical) 222.387
SHIPPING CLERK (clerical) 222.138
SHIPPING AND RECEIVING CLERK (clerical) 222.387
STUBBER (ret. trans.) 222.687

Opportunities for Special Worker Groups

Job opportunities are not expected to be bright in these occupations for any group of workers. Only about one out of ten persons in these jobs are women.

During early 1969 stock clerks and shipping clerks were reported to be in surplus in some of the major labor market areas of the State. With the outlook for growth in the category so limited, these surpluses are likely to continue.

Related California Occupational Guide

Shipping and Receiving Clerk, No. 63.

Telephone Operators

Job Outlook

Growth in these occupations will not be pronounced over the forecast period. The number of jobs, which averaged about 47,000 in 1968, is estimated at 50,000 in 1975, for an increase of only 3,000. However, replacement needs over the seven-year period will amount to about 11,000.

The communication industry will account for about one-half of the job opportunities, despite continued automation. Nearly all these jobs will be the result of replacement needs. The largest single source of new jobs for telephone operators in California will be in business services. Medical and educational services, as well as establishments in the finance, insurance, and real estate sectors are other industries in which substantial numbers of job opportunities will occur. Smaller numbers of opportunities will be scattered among most of the remaining industries.

Representative DOT Titles in This Category

CENTRAL-OFFICE OPERATOR (tel. & tel.) 235.862
CLERK, ROUTE (tel. & tel.) 235.588
INFORMATION OPERATOR (tel. & tel.) 235.862
TELEPHONE-ANSWERING-SERVICE OPERATOR (bus. ser.) 235.862
TELEPHONE OPERATOR (clerical) 235.862
TELEPHONE OPERATOR, CHIEF (clerical) 235.138

Opportunities for Special Worker Groups

Nearly all telephone operators are women. In early 1969, applicants for job openings were reported in surplus in nearly all major labor market areas of the State. Replacement needs, which develop gradually, are not likely to result in shortages of operators in the near future.

Related California Occupational Guides

Telephone-Answering-Service Operator, No. 267; Telephone Operator, No. 54.

Clerical and Kindred Workers, n.e.c.

Job Outlook

This is one of the largest aggregate groups of workers in California's entire work force. From about 470,000 jobs in 1960, the average increased to 635,000 in 1968, and is expected to reach 765,000 by 1975.

New jobs created by industrial expansion will result in 130,000 job opportunities over the seven-year forecast period. Another 120,000 opportunities will result from replacements among this group of clerical workers. Although more detail would be desirable, available data does not permit additional occupational differentiation. Distribution of job opportunities by major industry group is shown in Appendix tables 1 and 2.

Representative DOT Titles in This Category

(Well over 1,000 job titles were used by census enumerators to describe the various jobs held by Clerical and Kindred Workers, n.e.c. in 1960.)

Agents, n.e.c.:	BOOKING AGENT (amuse. & rec.) 191.118 ADJUSTMENT CLERK (clerical) 241.368 RIGHT-OF-WAY AGENT (any ind.) 191.118
Attendants and Assistants, Library:	LIBRARY ASSISTANT (library) 249.368 TAPE LIBRARIAN (clerical) 223.387
Attendants, Physicians and Dentist's Office:	DENTAL ASSISTANT (medical ser.) 079.378 MEDICAL ASSISTANT (med. ser.) 079.368
Collectors, Bill and Account:	COLLECTOR (clerical) 240.368
Dispatchers and Starters, Vehicle:	DISPATCHER, MOTOR VEHICLE (clerical) 919.168
File Clerks:	FILE CLERK (clerical) I 206.388
Insurance Adjusters, etc:	CLAIM EXAMINER (insurance) II 249.268
Payroll and Time Clerks:	PAYROLL CLERK (clerical) 215.488 TIMEKEEPER (clerical) 219.388
Receptionists:	RECEPTIONIST (clerical) 237.368
Stock Clerks:	STOCK CLERK (clerical) 223.387 TOOL CLERK (clerical) 223.387
All Other Clerical Workers, n.e.c.:	BAGGAGEMAN (motor trans.) 358.878 RAILWAY-EXPRESS CLERK (r.r. trans.) 910.368 OFFICE BOY (clerical) 230.878 BROKERAGE CLERK (finan. inst.) I 219.488 CLASSIFIED-AD CLERK (print. & pub.) 209.388 HOTEL CLERK (hotel & rest.) 242.368 METER READER (light, ht., pwr.; waterwrks.) 239.588 STATISTICAL CLERK (clerical) 219.388

Opportunities for Special Worker Groups

About six out of every ten job opportunities will be filled by women, if present ratios continue. Because of diversity of jobs in this category, many opportunities for newcomers to the labor market are bound to occur.

Related California Occupational Guides

Accounting Clerk, No. 82; Automobile Contract Clerk, No. 52; Classified Counter Clerk, No. 244; Clerk, Foreign Trade, No. 3; File Clerk, No. 261; Federal Cataloger, No. 311; Hospital Admitting Clerk, No. 409; Library Assistant, No. 417; Meter Reader, No. 416; Receptionist, No. 21; Room Clerk, No. 70; Telephone Service Representative, No. 294; Travel Agent, No. 213.

Insurance Agents and Brokers

Job Outlook

From an average of about 43,000 in 1968, jobs for insurance agents will increase to an estimated 50,000 in 1975. In addition to these 7,000 new jobs will be an additional 6,000 opportunities to replace insurance agents who will leave the State's labor force over the forecast period.

This is a one-industry occupation. All insurance agents and brokers are in SIC 64, which is a part of the finance, insurance, and real estate industrial division.

Representative DOT Titles in This Category

GENERAL AGENT (insurance) 250.258
INSURANCE BROKER (insurance) 250.258
LIFE UNDERWRITER (insurance) I 250.258
SALESMAN, INSURANCE (insurance) 250.258

Opportunities for Special Worker Groups

About nine out of ten California insurance agents are men. College training, although not essential, may aid the agent in establishing good personal relationships with prospective clients. Insurance agents and brokers must be licensed by the State. There will continue to be many opportunities for mature workers to enter this profession.

During early 1969, a shortage of insurance sales job applicants was reported in several major labor market areas, particularly in Southern California.

Related California Occupational Guides

Beginning Jobs in the Insurance Industry, No. 431; Claim Adjuster, No. 67; Underwriter (Insurance), No. 55.

Real Estate Agents and Brokers

Job Outlook

California is still the realtor's paradise. From an average of 40,000 jobs in 1960, this category increased to 55,000 in 1968. In 1975 there will be jobs for an estimated 68,000 real estate operators, 13,000 of which will be new jobs created during the forecast period. An additional 11,500 of these workers will be needed to replace real estate men who will leave the State's labor force during the seven-year forecast period.

This is another single industry occupation. Nearly all real estate agents and brokers are in SIC group 65 - real estate, a part of the finance, insurance, and real estate industrial division.

Representative DOT Titles in This Category

MEMORIAL COUNSELOR (ret. tr.) 250.358
REAL ESTATE BROKER (real estate) 250.358
SALESMAN, REAL ESTATE (real estate) 250.358

Opportunities for Special Worker Groups

More than one out of four California real estate operators are women, and more than half of these women are over 45. Three out of four men in the occupation are older workers. The vast majority of real estate operators are at least high school graduates, and an increasing number are college graduates. Only licensed salesmen and brokers can legally sell real estate in the State. All applicants for real estate licenses must pass an examination administered by the California Division of Real Estate.

Related California Occupational Guides

Real Estate Salesman, No. 90; Real Estate Appraiser, No. 228.

Other Sales Workers, n.e.c.

Job Outlook

Jobs in this large and diverse category, which comprises more than 80 percent of all sales workers, are expected to grow from an average of 460,000 in 1968 to about 535,000 in 1975. In addition to the nearly 75,000 new jobs which will be created by industrial expansion will be 74,000 more job opportunities from replacement needs. This total of nearly 150,000 represents one of the largest aggregate blocks of job opportunities in California's entire labor force.

Opportunities in trade will far outnumber those in all the other industries combined, and will account for 80 percent of all new and replacement jobs.

Representative DOT Titles in This Category

Advertising Agents and Salesmen:	SALESMAN, ADVERTISING (print. & pub.) 258.358 SALESMAN, RADIO AND TELEVISION TIME (radio and tv broad.) 253.358
Auctioneers:	AUCTIONEER (ret. tr.; whole. tr.) 294.258
Demonstrators:	SALESPERSON, COSMETICS AND TOILETRIES (ret. tr.) 266.358 DEMONSTRATOR (ret. tr.; whole. tr.) 297.458
Hucksters and Peddlers:	SALESMAN, HOUSE-TO-HOUSE (ret. tr.) 289.358 PEDDLER (ret. tr.) I 291.858 VENDOR (amuse. & rec.) 291.858
Newsboys:	NEWSBOY (print. & pub.) II 291.858 NEWSPAPER CARRIER (print. & pub.) 291.868
Stock and bond salesmen:	SALESMAN, SECURITIES (finan. inst.) 251.258
Salesmen and salesclerks, n.e.c.:	CASHIER-CHECKER (ret. tr.) 299.468 SALESMAN, AUTOMOBILE (ret. tr.) 280.358 SALESPERSON, MEN'S FURNISHINGS (ret. tr.) 263.358 SALESPERSON, FLOWERS (ret. tr.) 260.458 SALESPERSON, FURNITURE (ret. tr.) 274.358 SALESMAN, FOOD PRODUCTS (whole. tr.) 263.358 SALESPERSON, WOMEN'S GARMENTS (ret. tr.; whole. tr.) 263.458 PHARMACEUTICAL DETAIL MAN (whole. tr.) 266.158 SALESPERSON, SHOE (ret. tr.) 263.358

Opportunities for Special Worker Groups

Men comprise more than 60 percent of all workers in this category. Despite the aggregate demand for large numbers of these workers, there was a general surplus during early 1969 of job applicants with experience as salesclerks, sales workers, and grocery checkers. On the other hand, specialty salesmen, and high producing commission salesmen are always in demand while unproductive salesmen tend to drift into other occupations.

Related California Occupational Guides

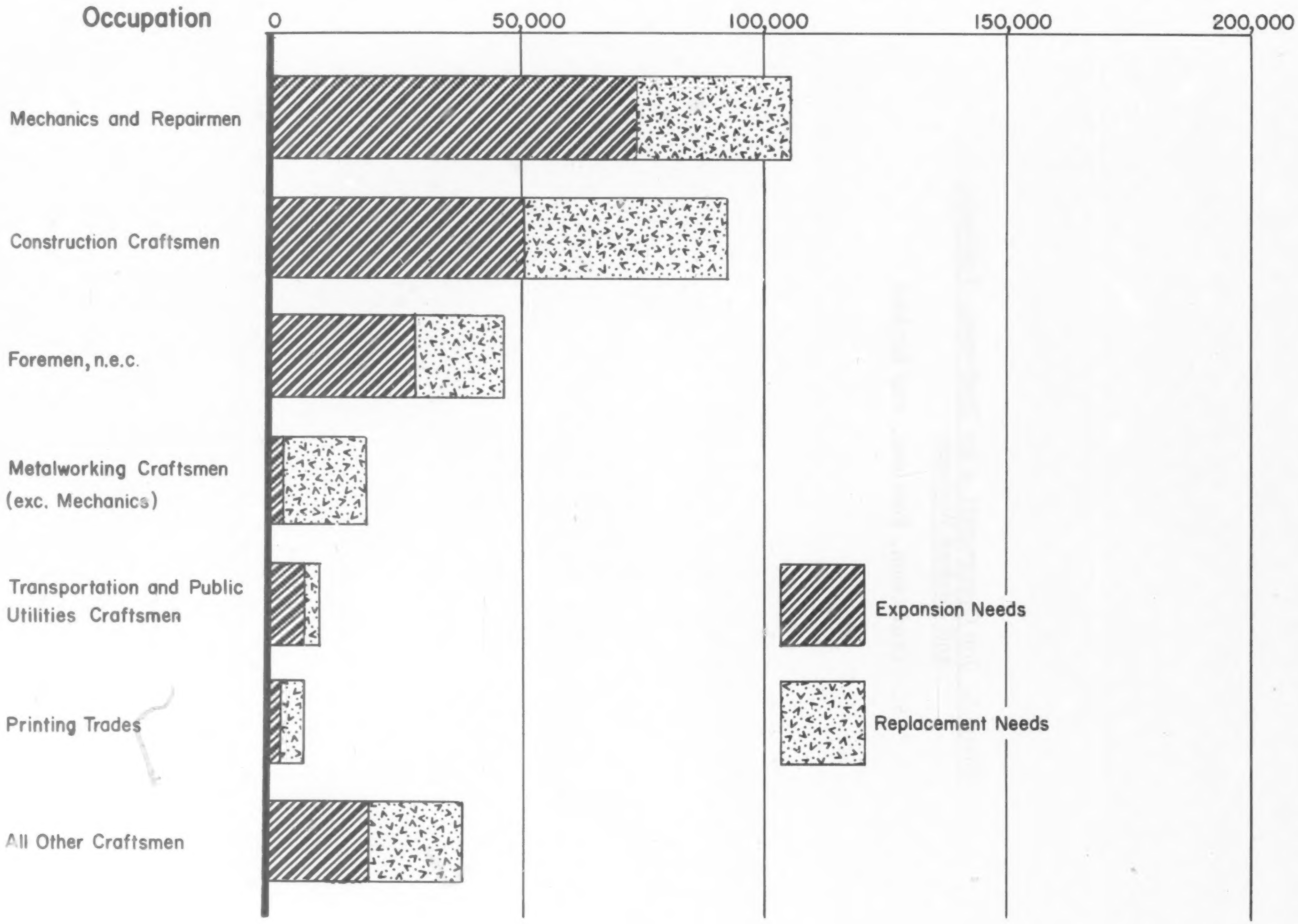
Automobile Parts Man, No. 237; Display Man, No. 80; Display Man, General Merchandise (Retail Trade), No. 375; Food Clerk, No. 13; Grocery Checker, No. 292; Grocery Product Salesman, No. 285; Pharmaceutical Sales Representative, No. 269; Routeman, No. 217; Salesclerk, Variety Store, No. 372; Salesman, Building Materials and Supplies, No. 410; Salesperson, Cosmetics, No. 388; Salesperson, Hardware, No. 73; Salesperson, Home Furnishings, No. 124; Salesperson (Wearing Apparel), No. 56.

Chart D. Job Opportunities for Craftsmen, Foremen, and Kindred Workers

5. Craftsmen, Foremen, and Kindred

Chart D. Job Opportunities for Craftsmen, Foremen, and Kindred Workers

Total Number of Jobs from Industrial Expansion and from Replacement Needs, 1968 - 1975



5. Craftsmen, Foremen, and Kindred Workers

Highlights

Despite the relatively slow growth rate for this occupational classification, a total of 325,000 jobs will need to be filled over the forecast period. Stringent requirements for many formal apprenticeship programs tend to limit the supply of qualified journeymen.

More than 90,000 additional jobs will become available to construction craftsmen. There will be about 23,000 job opportunities for carpenters, and more than half of these will be to replace carpenters who are leaving the labor force. In contrast to the occupation of carpenter, nearly two-thirds of the estimated 25,000 jobs for motor vehicle mechanics which will originate over the seven-year period will be created through industrial expansion. High earnings coupled with the existing shortage of qualified workers make this a promising field, particularly for young men from disadvantaged groups. Job capability, rather than formal education, are what employers demand. Jobs for more than 65,000 other mechanics and repairmen (another miscellaneous category) will be needed over the forecast period, while another 7,000 jobs will be ready for qualified airplane mechanics and repairmen.

See pages immediately following for additional detail on selected skilled occupations.

Carpenters

Job Outlook

Jobs for carpenters are expected to increase to about 80,000 in 1975 from an average of 70,000 in 1968. In addition to the more than 10,000 jobs resulting from industrial expansion will be approximately 12,500 opportunities to replace workers in this occupation who will leave the State's labor force during this seven-year period.

Job opportunities for carpenters may be found in nearly every California industry, but will be most prevalent in construction. Other industries with significant employment of carpenters include furniture, building materials, finance, insurance and real estate, business services and the miscellaneous entertainment and recreation industry.

Representative DOT Titles in This Category

CARPENTER (construction) 860.381
DOOR-HANGER (construction) 860.381
FLOOR-LAYER (const.; ret. trade) 864.781
FORM BUILDER (const.) 860.381
CARPENTER, ROUGH (const.) 860.781
SHIPWRIGHT (ship & boat building & repair) 860.381

Opportunities for Special Worker Groups

Nearly all job opportunities in this field will be filled by young men. Most jobs require union membership. Apprenticeship training for entry level workers usually lasts about four years. High school graduation or its equivalent and an age limit of from 17-27 are the usual prerequisites for entrance into an apprenticeship program.

Related California Occupational Guide

Carpenter, Carpenter Apprentice, No. 169.

Job Outlook

Average employment of about 12,000 of these workers is anticipated in 1975. This represents an increase of nearly 4,000 from the 1968 average of just over 8,000. Replacement needs during the seven-year period are expected to create over 1,000 additional jobs.

The construction industry accounts for the great majority of the new jobs although a few may be found scattered among the chemical, wholesale trade and building materials industries.

Representative DOT Titles in This Category

CEMENT MASON (const.) 844.884
TERRAZZO WORKER (const.) 861.781
CEMENT MASON, HIGHWAYS & STREETS (const.) 852.884

Opportunities for Special Worker Groups

Few women are employed in this skilled trade. Completion of a three-year apprenticeship is the recommended method of entering the occupation. Apprentice openings are filled by young men usually between the ages of 18 and 25. Good physical condition and manual dexterity are important assets. A substantial number of workers have acquired cement masonry skills informally by working on building and road construction jobs as laborers assisting cement masons.

Related California Occupational Guides

Cement Mason, No. 181; Terrazzo Worker, No. 103.

Electricians

Job Outlook

Jobs for electricians in California are expected to increase to about 50,000 in 1975, from an average employment of 42,000 in 1968. In addition to this increase caused by industrial expansion, another 6,500 job opportunities are anticipated from persons leaving the State's labor force during this seven-year period.

Electricians are employed in the majority of California's industries. Job opportunities will continue to be centered in the construction industry. Other opportunities for electricians will occur in the aircraft, railroad, air transportation, and several of the service industries, particularly business and medical services. The federal government will also provide many jobs for electricians during the forecast period.

Representative DOT Titles in This Category

ELECTRICIAN, AIRPLANE (aircraft mfg.) 825.281
ELECTRICIAN (any ind.) 824.281
ELECTRICIAN REPAIRMAN (any ind.) 829.281
ELECTRICIAN (ship, boat, bldg. & repair) 825.381
WIREMAN, STREET LIGHT (light, heat, & power) 821.884

Opportunities for Special Worker Groups

A large proportion of electricians are union members. The usual procedure for admittance to the trade involves completing the four-year apprenticeship program. Applicants must be between the ages of 18-24, and in good health. They are required to be high school graduates. Few women hold jobs as electricians.

Related California Occupational Guides

Electrician (Construction), No. 121; Electrician, Electrician Apprentice (Construction and Shipbuilding), No. 174.

Excavating, Grading Machine Operators

Job Outlook

Employment in this category is expected to increase by over 8,000 from 1968 to 1975. More than 28,000 people are expected to be employed as construction machine operators in 1975, increasing from an average of about 20,000 in 1968. In addition, over 2,500 job opportunities will be available as people in this group of occupations leave the State's labor force.

These jobs exist in many industries, but the great majority of opportunities will be in the construction industry. Most of the remaining opportunities will occur in utilities, business services, and government.

Representative DOT Titles in This Category

ASPHALT PAVING MACHINE OPERATOR (const.) 853.883
BLADE-GRADER OPERATOR (const.) 851.883
BULLDOZER OPERATOR (any ind.) 850.883
CONCRETE MIXER OPERATOR (conc. prod.; const.) 570.885
EARTH BORING MACHINE OPERATOR (const.; light, heat, power) 859.782
MOTOR GRADER OPERATOR (const.) 851.883
PILE DRIVER OPERATOR (const.) 859.782
POWER SHOVEL OPERATOR (any ind.) 850.883
ROAD-ROLLER OPERATOR (const.) 859.883
TRENCH DIGGING MACHINE OPERATOR (const.) 850.883

Opportunities for Special Worker Groups

Most jobs in these occupations are under the jurisdiction of the International Union of Operating Engineers. Completing the apprenticeship program requires three years. Admittance to apprenticeship training is open to anyone between the ages of 18-25, in good health and with good manual dexterity and visual acuity. Nearly all construction machine operators are men.

Related California Occupational Guides

Construction Machinery Operator, No. 147; Operating Engineer, No. 304.

Painters and Paperhangers

Job Outlook

Employment of painters and paperhangers is expected to increase from a 1968 average of about 40,000 to a 1975 figure of nearly 48,000. Losses from the State's labor force will provide an additional 8,500 opportunities during the forecast period.

These jobs are located mainly in the construction industry. Some opportunities will be found in business services, and in the finance, insurance and real estate industry. A few job opportunities, mostly for maintenance painters, will be scattered among other industries.

Representative DOT Titles in This Category

FLOOR FINISHER (const.) 864.884
PAINTER (const.) 870.781
PAINTER, HAND (any ind.) 970.381
PAINTER, MAINTENANCE (any ind.) 840.781
PAINTER, RAILROAD CAR (r.r. trans.) 845.381
PAINTER, ROUGH (const.) 840.884
PAINTER, SHIPYARD (ship & boat bldg. & rep.) 840.781
PAINTER, SIGN (any ind.) 970.381
PAPERHANGER (const.) 841.781
STEEPLE JACK (const.) 869.781

Opportunities for Special Worker Groups

Most jobs in this group of occupations are under union auspices. Completing a three-year apprenticeship training period is the best way to learn the trade. Apprenticeship training is open to anyone who can meet union qualifications and who has the physical capacity to perform the work.

Related California Occupational Guides

Painter, No. 148; Painter, Painter Apprentice, No. 170.

Plumbers and Pipe Fitters

Job Outlook

Employment is expected to increase to about 37,000 in 1975 from an average of 30,000 in 1968. Added to the 7,000 jobs created by industrial expansion will be another 5,000 jobs to replace plumbers leaving the State's labor force during the forecast period.

Although these job opportunities are located in the majority of California's industries, by far the greatest number will occur in construction. Government and the building materials industry also will have a substantial number of job openings.

Representative DOT Titles in This Category

GAS-MAIN FITTER (light, heat & power) 862.381
PLUMBER, MAINTENANCE (any ind.) 802.381
PIPE FITTER I (const.) 862.381
PIPE FITTER II (ship & boat bldg. & rep.) 862.281
PLUMBER (const.) 862.381

Opportunities for Special Worker Groups

Plumbing jobs are nearly all held by men. This is a heavily unionized occupation. Apprentices must complete a five-year program. Apprentice applicants are required to be between the ages of 16 and 25. They must be high school graduates or demonstrate equivalent educational attainment.

New programs, such as that provided by the Apprenticeship Opportunity Foundation in San Francisco, are being established to increase the number of apprenticeship applicants from disadvantaged groups in this and other construction trades.

Related California Occupational Guides

Plumber, Plumber Apprentice, No. 173; Shipfitter, No. 326.

Foremen, n.e.c.

Job Outlook

This category has been growing consistently in California at about the same rate as the employed labor force. The average of 95,000 jobs in 1960 increased to nearly 125,000 in 1968. Projections indicate an average of more than 150,000 jobs in this category in 1975. Added to the estimated increase of 29,000 jobs from industry expansion will be 18,000 jobs to meet replacement needs over the seven-year forecast period.

Foremen are well represented in nearly every industry. The largest number of job opportunities will be found in the aerospace industries (ordnance, fabricated metals, electrical machinery, aircraft and instruments), construction and wholesale trade, with small numbers scattered among the remaining industries.

Representative DOT Titles in This Category

CARPENTER FOREMAN (const.) 860.131
FOREMAN, ABATTOIR (slaught. & meat pack.) 525.131
FOREMAN (fabric. plastics prod.; plastics mat.) 556.130
FOREMAN, ASSEMBLY LINE (elec. equip.) 723.131
FOREMAN, COOKROOM (can. & preserv.) 529.132
FOREMAN, INSPECTION DEPARTMENT (garment) 786.134
FOREMAN, MAINTENANCE-AND-CONSTRUCTION (petrol. prod.) 869.138
FOREMAN, MOBILE HOMES (trans. equip.) 869.131
FOREMAN, PRESSROOM (print. & pub.) 651.130
FOREMAN, WIRE-COIL COMPONENTS (electronics) 726.130
GENERAL FOREMAN (any ind.) 183.168
GENERAL YARDMASTER (r.r. trans.) 183.168
LAUNDRY FOREMAN (laund.) 361.138
MACHINE-SHOP FOREMAN, PRODUCTION (mach. shop) 609.130
MACHINE-SHOP FOREMAN, TOOL (mach. shop) 600.131
MINE FOREMAN (mining & quarrying) 181.168
SHOP FOREMAN (petrol. prod.) 710.131
WAREHOUSE FOREMAN (any ind.) 929.138
WOODS BOSS (forestry) 442.138

Opportunities for Special Worker Groups

This is not a category for entry level workers. Traditionally, foremen are outstanding workmen who learn how to handle other employees. Thus, those who aspire to these jobs must first master their trade. Qualified foremen not presently in this State's labor force are most likely to transfer to California plants without changing their employer. Up to 95 percent of foremen are men. Foreladies are commonly employed in canneries and in the apparel industries.

Skilled Machining Workers

Job Outlook

Employment of skilled machining workers is expected to decline by about 1,000 jobs to an average of about 62,000 by mid-1975. Employment in this worker category averaged about 63,000 in 1968. This loss is expected to be more than offset, however, by over 8,000 job opportunities which will result from machinists who will leave the State's labor force during this seven-year forecast period.

Jobs in these occupations are found in most California industries. The majority of new jobs for machinists will be created in the electrical machinery manufacturing industry, with smaller numbers in railroads, and in the machinery manufacturing industry. Replacement of large numbers of older machinists will be needed in the fabricated metals industry and in aircraft manufacturing.

Representative DOT Titles in This Category

Machinists:	INSTRUMENT MAKER II (any ind.) 600.280 LAYOUT MAN (mach. shop) 600.381 MACHINIST (mach. shop) I 600.280 OUTSIDE MACHINIST (ship and boat bldg. & repair) 623.281 MARINE ENGINE MACHINIST (ship and boat bldg. & repair) 623.281 TOOL-MACHINE SET-UP OPERATOR (mach. shop) 601.280
Jobsetters:	JOBSETTER (mach. shop) 600.380 SETUP MAN I (any ind.) 616.380

Opportunities for Special Worker Groups

These jobs require a good deal of training which is best obtained by serving a four-year apprenticeship period. This trade is highly unionized. Generally, an apprentice candidate must have the educational equivalent of high school graduation. Nearly all machinists are men.

Training for entry level jobs as machine operators is being offered by federally funded MDTA training courses. Applicant shortages for machinist job openings were widespread in California during early 1969.

Related California Occupational Guides

Machinist (Machinist Apprentice), No. 9; Machine, Shop Inspector, No. 281; Tool and Die Maker, No. 15.

Sheet Metal Workers

Job Outlook

This trade is expected to grow from an average of about 23,000 jobs in 1968 to over 26,000 in 1975. In addition to the increase in employment, nearly 3,000 more jobs are expected to result from sheet metal workers leaving the State's labor force during this seven-year period.

The construction industry will be the major source of new jobs, but the electrical machinery, air transportation, business services industries and federal government are also expected to provide numerous opportunities. Few new jobs will be created over the forecast period for sheet metal workers in the fabricated metals industry and in aircraft manufacturing. However, replacement needs in these two industries should provide job opportunities for a substantial number of workers.

Representative DOT Titles in This Category

COPPERSMITH (ship & boat bldg. & repair) 862.281
DUCT INSTALLER (const.) 804.884
SHEET METAL LAYOUT MAN (any ind.) 809.381
SHEET METAL MECHANIC (any ind.) 804.281
SHEET METAL WORKER (any ind.) 804.281
SKIN MAN (aircraft mfg.; air trans.) 807.381

Opportunities for Special Worker Groups

As in most crafts, this occupation is highly unionized. Construction unions are usually rather selective in referring applicants to their four-year apprenticeship training programs. Usually the apprentice candidate must be between 17 and 23 years old and a high school graduate. Almost all sheet metal workers are men.

Federally funded MDTA training courses for sheet metal workers have been established. During early 1969 these craftsmen were reported in short supply in several of the State's labor market areas.

Related California Occupational Guides

Sheet Metal Worker, Aircraft, No. 28; Sheet Metal Worker (Sheet Metal Worker Apprentice), No. 49.

Airplane Mechanics and Repairmen

Job Outlook

Employment is expected to increase by about 4,000 workers from the 1968 average employment of 31,000 to about 35,000 in 1975. In addition to this industrial expansion, over 3,000 jobs will become available as a result of airplane mechanics leaving the State's labor force during the forecast period.

The air transportation industry will provide the majority of job openings. The federal government and aircraft manufacturing industries will also provide a significant number of opportunities.

Representative DOT Titles in This Category

FLIGHT ENGINEER (air trans.) 621.281
HYDRAULIC TESTER (air trans.) 621.281
AIRCRAFT AND ENGINE MECHANIC (air mfg.; air trans.) 621.281
SUPERCHARGER MECHANIC (air mfg.; air trans.) 621.281
MECHANIC, AIRCRAFT ACCESSORIES (air mfg.) 621.781
CARBURETOR MAN (air trans.) 621.281
EXPERIMENTAL MECHANIC (air mfg.) II 621.281
FLIGHT TEST SHOP MECHANIC (air mfg.) 621.381
PNEUMATIC TESTER AND MECHANIC (air mfg.) 621.381

Opportunities for Special Worker Groups

Most airplane mechanics learn the trade by working as a trainee for three or four years. However, military experience is applicable toward completing the apprenticeship period. Some colleges offer two-year courses for people interested in this career. The Federal Aviation Authority also offers an 18-month mechanics school. F.A.A. certification is a requirement. Few women are employed in these occupations.

During 1969 this was classed as a "shortage" occupation in California. Federally funded MDTA courses are being given in both Northern and Southern California.

Related California Occupational Guides

Airframe and Power Plant Mechanic, No. 339; Hydraulic Equipment Repairman, No. 370.

Motor Vehicle Mechanics

Job Outlook

California employment for this occupational group increased rapidly from an average of 58,000 in 1960 to nearly 78,000 in 1968. This rate of increase should continue, with an average of 94,000 projected for 1975. In addition to the 16,000 new jobs from industrial expansion, another 8,500 will be added to replace mechanics who will leave the labor force during the seven-year forecast period.

About two out of every three mechanics hired during the seven-year forecast period will be employed by automobile agencies and service stations. Most of the remaining job opportunities for these workers will be in automobile repair shops. Smaller numbers should find job opportunities in trucking firms, and government agencies, with a few scattered among the other industries.

Representative DOT Titles in This Category

AUTOMATIC-TRANSMISSION MECHANIC (auto. ser.) 620.281
AUTOMOBILE-BODY REPAIRMAN (auto. ser.) 807.381
AUTOMOBILE MECHANIC (auto. ser.) 620.281
FRONT-END MAN (auto. ser.) 620.281
GLASS INSTALLER (auto. ser.) 865.884
MOTORCYCLE REPAIRMAN (auto. ser.) 620.281
DIESEL MECHANIC (any ind.) 625.281
TRUCK MECHANIC (auto. ser.) 620.281
TUNE-UP MAN (auto. ser.) 620.281

Opportunities for Special Worker Groups

Entry level workers should find many job opportunities as motor vehicle mechanics. Current shortages are likely to continue. As in most trades, however, the higher paying specialities such as automatic-transmission mechanic require a great deal of additional training. MDTA and other programs are available to qualify disadvantaged workers for these crafts.

During 1969, this was classified as a shortage occupation in California. A number of federally funded MDTA courses are being given. These include preapprentice auto mechanic, auto service station mechanic, auto front-end mechanic, and auto body repairman.

Related California Occupational Guides

Automobile Mechanic, No. 24; Automotive Mechanic (Automotive Mechanic Apprentice), No. 92; Body and Fender Man, No. 68; Garage Service Salesman, No. 240; Motorcycle Mechanic, No. 414; Truck Mechanic and Servicemen, No. 133.

Other Mechanics and Repairmen

Job Outlook

Employment in these occupations is expected to climb to an average of about 190,000 in 1975, from a corresponding figure of about 142,000 in 1968. These industrial expansion opportunities are expected to be supplemented by over 18,000 openings resulting from death and retirement losses over the seven-year forecast period.

Jobs in these occupations can be found in almost every California industry. Construction and wholesale trade industries should provide the majority of the opportunities. Educational services, medical and business services, electrical machinery manufacturing, State and local government, and miscellaneous repair services will also provide numerous opportunities.

Representative DOT Titles in This Category

Air-conditioning, heating and refrigeration mechanics:	FURNANCE INSTALLER-AND-REPAIRMAN, HOT AIR (any ind.) 869.281 AIR-CONDITIONING MECHANIC, COMMERCIAL (any ind.) 637.281 REFRIGERATION MECHANIC (any ind.) 637.281
Mechanics and repairmen, n.e.c.:	CAMERA REPAIRMAN (any ind.) 714.281 COIN MACHINE SERVICEMEN (bus. serv.) 639.281 ELECTRICAL REPAIRMEN (aircraft mfg.) 825.281 ELECTRICAL APPLIANCE SERVICEMAN (any ind.) 827.281 ELECTRIC MOTOR ANALYST (any ind.) 721.281 ELEVATOR CONSTRUCTOR (const.) 825.381 GAS APPLIANCE SERVICEMAN (any ind.) 637.281 GUNSMITH (any ind.) 632.281 INSTRUMENT REPAIRMAN (any ind.) I 710.281 LOCKSMITH (any ind.) 709.281 MAINTENANCE MECHANIC II (any ind.) 638.281 FARM EQUIPMENT MECHANIC (agric.) II 624.381 OUTBOARD MOTOR MECHANIC (ship & boat bldg. & rep.) 623.281 METER REPAIRMAN (any ind.) 710.281 NEON SIGN SERVICEMAN (signs) 824.281 X-RAY EQUIPMENT TESTER (any ind.) 729.281

Opportunities for Special Worker Groups

Training and entrance requirements vary according to the occupation; some, such as refrigeration mechanic, require an apprenticeship program with admittance based upon the selection procedures of the particular union. Other occupations, such as electrical appliance repairman, have no formal training programs. These latter occupations are open to anyone, preferably high school graduates, who have some knowledge of electricity and mechanical ability. Informal training is usually given while on the job. Other repair occupations, including gunsmith and camera repairman, often begin as hobbies and extend into a full-time career. Few women are employed in these occupations.

Related California Occupational Guides

Coin Machine Repairman, No. 358; Farm Equipment Mechanic, No. 302; Gunsmith, No. 284; Household Appliance Repairman, No. 161; Outboard Motor and Small Engine Repairman, No. 344; Refrigeration Mechanic, No. 32.

Linemen and Servicemen

Job Outlook

The number of jobs in these occupations will increase to about 50,000 in 1975 from an average of about 42,000 in 1968. Added to these industrial expansion opportunities will be an additional 3,000 job openings resulting from workers leaving the State's labor force over the seven-year period.

Job opportunities in these occupations will be concentrated in about twenty-five of California's industries. The communications industry will provide the majority of jobs. The construction, utilities, and electrical machinery industries will also provide opportunities over the forecast period. In many areas of the State, transmission lines are being converted from aerial to underground as rapidly as the cost can be justified.

Representative DOT Titles in This Category

CABLE MAN (light, heat, and power) 821.381
CABLE MAN (tel. and tel.) 822.884
EQUIPMENT INSTALLER (tel. and tel.) I 822.381
VOLTAGE TESTER (light, heat, and power) 821.381
LINEMAN (const.; light, heat, and power) 821.381
LINEMAN (tel. and tel.) 822.381
MECHANICIAN, SUBMARINE CABLE EQUIPMENT (tel. and tel.) 872.281
PRIVATE BRANCH EXCHANGE INSTALLER (tel. and tel.) 872.381
CABLE SPLICER (const.; light, heat, and power; tel. and tel.) 829.381
FRAMEMAN (tel. and tel.) 822.884

Opportunities for Special Worker Groups

Entry into these occupations is not difficult. Utilities companies hire many young, inexperienced men and train them to perform skilled jobs. About the only requirement is a high school education or its equivalent, such as a vocational school certificate. These occupations should provide many job opportunities for entry level applicants from disadvantaged groups. Few women are employed in these occupations.

Related California Occupational Guides

Cable Splicer, No. 407; Central Office Installer, No. 129; Lineman, No. 406.

Job Outlook

This is not a fast growing occupation. Employment in 1975 is expected to increase by less than 1,000 over the 1968 average of 29,000. Most of the 5,000 job opportunities will result from stationary engineers who leave the State's labor force over the seven-year forecast period.

Job opportunities for stationary engineers will be concentrated in various manufacturing industries, in service industries, and in government.

Representative DOT Titles in This Category

AIR COMPRESSOR OPERATOR (any ind.) 950.885
GAS PUMPING STATION OPERATOR (light, heat, & power) 953.782
OIL PUMPER (petrol. prod.) 914.787
STATIONARY ENGINEER (any ind.) 950.782
TURBINE OPERATOR (light, heat, & power) 952.782
VENTILATION MAN (any ind.) 950.885
WAYS OPERATOR (ship & boat bldg. & repair) 921.782

Opportunities for Special Worker Groups

In most instances a high school or trade school degree, mechanical aptitude and dexterity are the only important criteria. The best way to become a stationary engineer is to enter an apprenticeship program which customarily lasts three to four years. However, many have entered the trade as helpers and learned the duties through informal on-the-job training. Apprenticeship committees prefer young men between the ages of 18 and 25. Few women are employed in this occupation.

Related California Occupational Guides

Stationary Engineer, No. 234; Stationary Engineer, Stationary Engineer Apprentice, No. 361.

Craftsmen and Kindred Workers, n.e.c.

Job Outlook

In 1968 the number of jobs for craftsmen and kindred workers (n.e.c.) increased to about 40,000 from the 1960 figure of 30,000. This upward trend is expected to continue. By 1975 jobs in this category will average nearly 49,000. Over 6,500 job opportunities resulting from workers leaving the State's labor force will complement the 9,000 new jobs from industrial expansion, for a total of over 15,500 opportunities from these sources over the seven-year forecast period.

Opportunities in these crafts will be found in nearly all California industries. Construction and miscellaneous retail industries will provide the majority of them.

Representative DOT Titles in This Category

Bookbinders:	BOOKBINDER (print. & pub.) 977.884 ROUNDING AND BACKING MACHINE OPERATOR (print. & pub.) 653.885
Decorators and Window Dressers:	DISPLAY MAN (ret. trade) 298.081
Furriers:	FURRIER (fur goods) 142.081
Motion Picture Projectionists:	MOTION PICTURE PROJECTIONIST (amuse. & rec.) 960.382
Piano Tuners:	PIANO TUNER (any ind.) 730.381
Shoemakers and Repairmen:	SHOE REPAIRMAN (per. ser.) 365.381
Stone Carvers:	STONE CARVER (const.; stonework) 771.281
Tailors:	MASTER TAILOR (garment; ret. trade) 785.261 CUTTER, HAND IV (any ind.) 781.884
Craftsmen and Kindred Workers, n.e.c.:	BREWMASTER (malt liquors) 183.168 CARPET LAYER (ret. tr.) 299.381 FLOOR LAYER (const.; ret. trade) 864.781 LATHER (const.) 842.781 RIGGER (ship & boat bldg. & rep.) 806.281

Opportunities for Special Worker Groups

Entry standards vary widely for this diverse group of occupations. For most of these jobs, the candidate must complete a lengthy apprenticeship.

Related California Occupational Guides

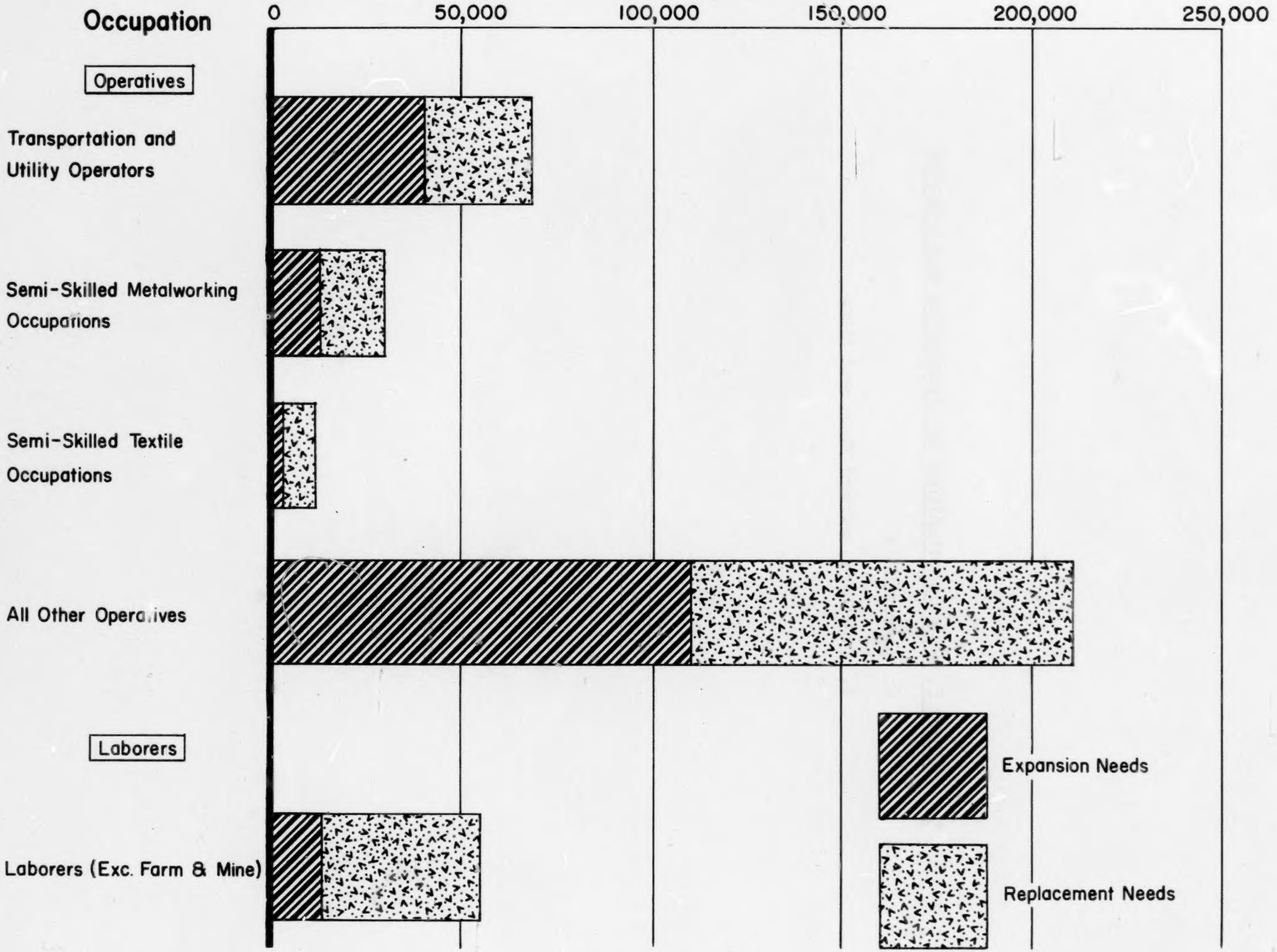
Bookbinder and Bindery Women, No. 214; Display Man, Nos. 80 and 275; Floor Covering Installer, No. 383; Floral Designer, No. 350; Rigger, No. 125; Tailor, Men's Garments, No. 158.

Chart E. Job Opportunities for Operatives and Laborers

6. Operatives
7. Laborers, except Farm and Mine

Chart E. Job Opportunities for Operatives and Laborers

Total Number of Jobs from Industrial Expansion and from Replacement Needs, 1968-1975



6. Operatives and Kindred Workers

Highlights

About 315,000 jobs will develop in this broad worker category. Some of the more promising occupations in which new workers may find substantial job opportunities are in the drivers, bus, truck, and tractor category, where over 45,000 jobs will open up through mid-1975. There will be jobs for about 17,000 metal working assemblers, mostly in durable goods manufacturing. More than 10,000 additional opportunities will be available for sewers and stitchers in manufacturing industries, an occupation dominated by women.

The projections also disclosed a need for about 20,000 automobile service and parking attendants. Eight out of ten of these will be expansion jobs, and should provide work which will appeal to many inexperienced young men with limited education.

7. Laborers, Except Farm and Mine

Highlights

Substantial numbers of laborers will still be needed to meet job requirements, even in occupations which are expected to show little net growth by mid-1975. Of the more than 50,000 job opportunities for laborers, three out of four will be to replace workers leaving the labor force for various reasons.

Detail for selected occupations in the operative and laborer categories are given in the pages immediately following.

Drivers, Bus, Truck, Tractor

Job Outlook

Jobs for workers in these occupations increased from an average of 132,000 in 1960 to 161,000 in 1968. By 1975 jobs for this group of drivers should average about 189,000. Thus, more than 28,000 new jobs are expected to be created by industrial expansion between 1968 and 1975. An additional 18,000 job opportunities will become available to replace drivers who will leave the labor force during the seven-year forecast period.

The construction industry with trucking and warehousing will provide the majority of the job opportunities. Utilities and wholesale trade industries each should provide about 2,000 new jobs while business services and the stone, clay, and glass products industry will each have more than 1,000 new jobs over the seven-year period. Replacement needs for each of these industries should add substantially to these figures.

Representative DOT Titles in This Category

Bus Driver:	BUS DRIVER (motor trans.) 913.463
Truck and Tractor Drivers:	CONCRETE MIXING TRUCK DRIVER (const.) 900.883 DUMP TRUCK DRIVER (any ind.) 929.883 FARM EQUIPMENT OPERATOR (agric.) 409.883 GARBAGE COLLECTOR (motor trans.) 909.883 HIGHWAY MAINTENANCE MAN (gov. serv.) 899.884 TRACTOR OPERATOR (any ind.) 929.883 TRACTOR-TRAILER-TRUCK DRIVER (any ind.) 904.883

Opportunities for Special Worker Groups

Entrance requirements vary with individual firms. However, the usual minimum age is from 21 to 25. Applicants must have good eyesight, correctable to 20/40 or better. Many employers will accept trainees who have completed at least two years of high school, although some firms require completion of high school as a minimum educational requirement. A driver must gain several years' experience before he can obtain the more lucrative cross-country trucking jobs. Generally, however, little experience is required for local truck driving jobs. Long-haul truck drivers must have a valid California chauffeur's class A license, pass the I.C.C. physical examination, and be familiar with commission safety regulations. Most truck drivers are members of the Teamsters Union while bus drivers are either teamsters or members of the Amalgamated Transit Union. Few municipal bus drivers, farm tractor drivers and farm equipment operators belong to unions.

A federally funded MDTA project with more than 450 trainees was established during 1968 in Los Angeles. Despite reported surpluses of applicants for jobs in nearly every major labor market area of the State during early 1969, turnover in this very large group of occupations is an important factor in the continuing demand. Moreover, the long-range prospects for growth in these occupations should absorb temporary surpluses of applicants.

Related California Occupational Guides

Bus Driver, No. 2; Log Truck Driver, No. 102; Long-Haul Truck Driver, No. 255.

Deliverymen, Routemen, Cab Drivers

Job Outlook

Employment in these occupations grew from a little over 50,000 jobs in 1960 to nearly 65,000 in 1968. By 1975 an average of nearly 75,000 should be reached. Added to the more than 10,000 new jobs which will be created by industrial expansion during the seven-year projection period, will be over 7,000 job opportunities resulting from workers in these occupations leaving the State's labor force.

A decline in the employment is forecast for the local transportation industry where most of the cab drivers are employed. This decline will be more than offset by substantial employment increases in wholesale and retail trade, personnel services, and in the food products industry. Replacement needs will be of particular consequence in various segments of the trade industries, while all of the job opportunities in local transport will be from this source.

Representative DOT Titles in This Category

Taxicab Drivers and Chauffeurs:	AMBULANCE DRIVER (medical serv.) 913.883
	CHAUFFEUR (any ind.) 913.883
	TAXI DRIVER (motor trans.) 913.463
Deliverymen and Routeman:	DELIVERY BOY (ret. trade) 299.478
	SALESMAN-DRIVER (any ind.) 292.358
	COIN-VENDING-MACHINE COLLECTOR (bus. serv.) 292.483

Opportunities for Special Worker Groups

Employment as a taxicab driver is open to anyone over 21 in good health, with a history of safe driving, and without a criminal record. An eighth grade education is usually the minimum educational requirement, but the applicant must pass the chauffeur's license examination and the special taxicab operator's license examination offered by local police or safety departments.

Routemen are usually required to be at least high school graduates, with some sales experience. The routeman should be a good driver and he must have a chauffeur's license, but more important, he should have good sales ability.

Related California Occupational Guide

Salesman-Driver, No. 217.

Assemblers, Metalworking

Job Outlook

In 1960, metalworking assemblers in California numbered about 65,000. By 1968, the average employment increased to nearly 84,000. Projected 1975 employment will average about 90,000, a gain of more than 6,000 over the seven-year period. Replacement needs between 1968 and 1975 will require an additional 11,000 assemblers.

Job opportunities will be exclusively in manufacturing industries. In California, the electronics industry will provide at least one-third of the job opportunities. Aircraft manufacturing and the machinery industry (SIC 35) together will offer nearly another third, while substantial numbers will be needed in fabricated metals and motor vehicle manufacturing. Most of the remaining job opportunities will be in the primary metal industry, shipbuilding, mobile home manufacturing, instruments and in miscellaneous manufacturing.

Representative DOT Titles in This Category

ASSEMBLER, AUTOMOBILE (auto. mfg.) 806.887
ASSEMBLER-INSTALLER, GENERAL (aircraft mfg.) 806.781
CROWN-ASSEMBLY-MACHINE OPERATOR (any ind.) 692.885
FABRICATOR-ASSEMBLER, METAL PRODUCTS (any ind.) 809.381
FRAMER (trans. equip.) 806.884
METAL HANGER (trans. equip.) 806.884
PRINTED-CIRCUIT ASSEMBLER (electronics) 726.884
CABLE MAKER (elec. equip.; electronics) 726.884

Opportunities for Special Worker Groups

In the aggregate, these occupations employ nearly equal numbers of men and women. Because of their small hands and superior finger dexterity, women excel at many assembling occupations, particularly in the rapidly growing electronics industry. In contrast, nearly all openings for automobile assemblers are filled by men. Automobile and aircraft manufacturing firms are actively recruiting disadvantaged minority workers.

During 1969, several hundred persons were being trained in several federally funded MDTA projects for electromechanical assemblers and electronics assemblers in both Southern and Northern California. Assemblers were reported as being in surplus in several major California labor market areas during early 1969. Long-term needs should tend to absorb these temporary surpluses, however.

Related California Occupational Guide

Electronics Assembler, No. 47.

Welders and Flamecutters

Job Outlook

Jobs for an estimated 46,000 welders and flamecutters are forecast for 1975. This represents an increase of nearly 6,000 new jobs over the 1968 average. Workers in these occupations leaving the State's labor force during this seven-year forecast period will account for another 4,500 jobs, for a total of about 10,500 job opportunities from these sources.

The construction and machinery industries are expected to provide most of the new jobs for welders over the forecast period. Fabricated metals, electrical machinery and miscellaneous repair industries will each show moderate increases in employment of welders and flamecutters. A decline in the demand for these workers is forecast in aircraft manufacturing and shipbuilding.

Representative DOT Titles in This Category

Welders:
WELDER, ARC (welding) 810.884
BRAZER-ASSEMBLER (welding) 814.884
WELDER, COMBINATION (welding) 812.884
WELDER, GAS (welding) 811.884
WELDER, GUN (welding) 810.884
WELDER, RESISTANCE MACHINE (welding) 813.885
WELDER, SPOT (welding) I 810.782

Flamecutters:
FLAME-CUTTING MACHINE OPERATOR (welding) 816.782
FLAME-CUTTER, HAND (welding) I 816.884
ARC CUTTER (welding) 816.884

Opportunities for Special Worker Groups

A number of MDTA projects for welders were funded during the first three quarters of fiscal 1969. Welders were being trained in most of the principal labor market areas of the State. In early 1969, these workers were being reported in surplus in some areas of the State. The demand for them appears to fluctuate rapidly. Nearly all welding jobs are filled by men.

Related California Occupational Guides

Welder, No. 61; Welder, Combination, No. 84.

Sewers and Stitchers, Mfg.

Job Outlook

Nearly 36,000 sewers and stitchers are expected to be employed during 1975. This represents an increase of almost 4,000 new jobs over the 1968 average employment of 32,000. Replacement needs for workers leaving the labor force will account for an additional 7,000 jobs between 1968 and 1975.

Industrially, jobs as sewers and stitchers are concentrated in only a few California manufacturing industries. The majority of new job opportunities, as well as replacement needs, will be centered in the apparel industry. The furniture manufacturing and leather products industries, although exhibiting a declining demand for new job opportunities, will nevertheless require a moderate amount of workers for replacement needs during the forecast period.

Representative DOT Titles in This Category

BINDER (garment) 786.782
BUTTONHOLE MACHINE OPERATOR (garment) 786.885
COLLAR MAKER (leather prod.) 789.781
EDGER (garment) 786.782
EMBROIDERY-MACHINE OPERATOR (any ind.) 787.782
FASTENER-SEWER-MACHINE OPERATOR (garment) 786.885
HEMMER (garment) 786.782
MENDER (textiles) 782.884
PILLOW CASE SEWER, AUTOMATIC (textile) 787.885
QUILTING-MACHINE OPERATOR (house. furn.; matt. & bedspr.) 787.885
RUFFLER (house. furn.) 787.782
SEWING-MACHINE OPERATOR, ALL AROUND (any ind.) 787.782
SEWING-MACHINE OPERATOR, AUTOMATIC (any ind.) 787.885
SEWING-MACHINE OPERATOR, REGULAR EQUIPMENT (any ind.) 787.782
SEWING-MACHINE OPERATOR, REGULAR EQUIPMENT (garment) 786.782
SEWING-MACHINE OPERATOR, SPECIAL EQUIPMENT (garment) 786.885
SHIRRING-MACHINE OPERATOR, AUTOMATIC (household furn.) 787.885
STRAP-MACHINE OPERATOR, AUTOMATIC (garment; house. furn.) 787.885
ZIPPER SEWER (garment) 786.782

Opportunities for Special Worker Groups

Nearly 95 percent of these jobs are occupied by women. No specific level of education is required, but employers prefer to hire applicants who have experience operating industrial sewing machines. Specialized machines may require six months to two years of on-the-job training before the operator is fully qualified.

Testing and selection of sewing-machine operators is performed by the California State Employment Service. Training is offered by both public and private schools. Applicants who speak no English have been successfully placed in these jobs.

Demand for these workers is intermittent. Frequent layoffs and low earnings are characteristic of workers in these occupations.

Related California Occupational Guides

Drapery Seamstress, No. 91; Embroidery Machine Operator, No. 380; Sewing-Machine Operator, No. 146; Seamstress, No. 368.

Auto Service and Parking Attendants

Job Outlook

Jobs for auto service and parking attendants are expected to continue increasing from the 1968 average of 52,000 to a 1975 projection of nearly 70,000, providing 17,000 new jobs. An additional 3,000 workers will be required to replace jobholders leaving the State's labor force during this period.

Automobile dealers, gas stations, and auto repair shops will account for most of these jobs.

Representative DOT Titles in This Category

AUTOMOBILE-SERVICE STATION ATTENDANT (auto. serv.) 915.867
AUTOMOBILE-SELF-SERVE SERVICE STATION ATTENDANT (auto. serv.) 915.878
PORTER, USED CAR LOT (ret. tr.; whs. trade) 915.887
PARKING-LOT CHAUFFEUR (auto. serv.) 915.878
PARKING-LOT ATTENDANT (auto. serv.) 915.878

Opportunities for Special Worker Groups

In many cases, this work is available on a part-time basis for students or others seeking a second job. Although some employers prefer to hire only those with prior experience, many of these positions are open to the inexperienced. These occupations should provide job opportunities for many of the unskilled, unemployed, and underemployed. The training and experience gained in these jobs is valuable toward more skilled occupations such as auto mechanic, service station manager, and other jobs in automobile servicing industries. Only a small number of women are employed in these occupations.

Two federally funded MDTA projects were in progress during 1969. Although a surplus of applicants were reported in several of the State's major labor market areas during early 1969, job turnover and increasing needs for large numbers of qualified workers should tend to offset temporary worker surpluses.

Related California Occupational Guide

Service Station Attendant, No. 30.

Laundry and Dry Cleaning Workers

Job Outlook

The projection for laundry and dry cleaning workers indicates an increase from a 1968 average of about 43,000 jobs to 49,000 in 1975. Combined with this increase of 6,000 jobs from industrial expansion will be another 8,500 opportunities as a result of retirements and other losses to the labor force between 1968 and 1975.

The new jobs will be concentrated in the service industries, with the majority in personal services, many in medical services, and some in educational services. Hotels and nonprofit institutions should also experience increasing demand for workers in these occupations. Replacement needs will be concentrated in the personal and medical services industries, in hotels, and nonprofit organizations.

Representative DOT Titles in This Category

CLEANER AND PRESSER (clean., dye, and press.) 369.782
LAUNDRYMAN (any ind.) II 361.885
IRONER, CORONETS (laund.) 363.884
DRY CLEANER (clean., dye, and press.) 362.782
FOLDER (laundry) 369.887
HAT BLOCKER (clean., dye, and press.) 363.884
LAUNDRYMAN, HAND (laund.) 361.884
PRESSER, MACHINE (any ind.) 363.782
PRESSER, FORM (any ind.) 363.885
PRESSER, HAND (any ind.) 363.884
RUG CLEANER, HAND (clean., dye, and press.) 369.884
RUG DYER (clean., dye, and press.) II 364.884
SHIRT PRESSER (laund.) 363.885
RUG CLEANER, MACHINE (clean., dye, and press.) 361.782
STARCHER (laundry) 361.885
WASHER, MACHINE (laund.) 361.885
WASHING MACHINE LOADER-AND-PULLER (laund.) 361.886

Opportunities for Special Worker Groups

These occupations should offer many opportunities for unskilled entrants to the labor force. Little skill is involved for most jobs in this category and training can be accomplished in a short period of time. These occupations should also provide many opportunities for women to supplement their family income.

Federally funded MDTA training courses for machine presser and for shirt presser were being given to small numbers of trainees during 1969.

Related California Occupational Guides.

Dry Cleaning Occupations, No. 444; Laundry Workers, No. 207.

Meat Cutters Exc. Meat Packing

Job Outlook

From 1968 average employment of just over 23,000 the industrial need for meat cutters is expected to increase to a 1975 figure of about 26,000. These 3,000 new job opportunities will be about equal to the number of opportunities resulting from replacement needs.

Retail food stores will account for the largest number of job opportunities for meat cutters between 1968 and 1975. Wholesale meat distributors and eating and drinking places will also offer substantial job opportunities for these workers between 1968 and 1975.

Representative DOT Titles in This Category

BUTCHER, MEAT (hotel & restaurant) 316.781
MEAT CUTTER (ret. trade; wholesale trade) 316.884
BUTCHER, CHICKEN AND FISH (hotel & restaurant) 316.884

Opportunities for Special Worker Groups

Entry into these occupations is usually as a helper to journeyman meat cutters. The trade is learned while on the job in a relatively short period of time. Very few women are employed in these occupations.

Related California Occupational Guide

Meat Cutter-Jobber, (Meat Cutter-Jobber Apprentice), No. 218.

Other Operatives, n.e.c.

Job Outlook

Employment in this extremely large and diverse group of occupations, which included about 450,000 jobs in 1960, grew to an average of over 575,000 in 1968. During 1975 an estimated 660,000 jobs will be in this category. The projected 83,000 new jobs from industrial expansion over the forecast period represents an increase of 14 percent, compared with an increase of nearly 19 percent for the entire employed work force. Replacement needs over the forecast period will result in a demand for almost 85,000 job opportunities in this category.

Industrially, nearly seven out of every ten job opportunities will be in manufacturing, where machine tending occupations are concentrated. Trade, service and the construction industry will create most of the remaining opportunities. Appendix Table 1 shows industry figures for this category.

Representative DOT Titles in This Category

Over 5,000 occupational titles listed by census enumerators were included in this category. For this reason, the titles listed as representative are only a very tiny fraction of the total.

AIRPORT SERVICEMAN (air trans.) 912.384
ANTENNA INSTALLER (any ind.) 823.884
AUTOMOBILE WRECKER (whole. tr.) 620.884
BALL-MILL OPERATOR (any ind.) 599.885
BORING-MACHINE OPERATOR (mach. shop) 606.782
CAN-CONVEYOR FEEDER (food prep., n.e.c.) 529.885
CANNERY WORKER (can. & preserv.) 529.886
CONCRETE-MIXER OPERATOR (conc. prod.) 570.885
COFFEE ROASTER (food prep., n.e.c.) 523.885
DOG CATCHER (gov. ser.) 379.878
DRILL-PRESS OPERATOR, PRODUCTION (mach. shop) 606.782
DRY-WALL APPLICATOR (const.) 842.884
FORK-LIFT-TRUCK OPERATOR (any ind.) 922.883
GINNER (agric.) 461.885
LOG DECKMAN (sawmill) 667.887
PLASTIC-EXTRUDING-MACHINE OPERATOR (insulated wire) 691.782
SAND BLASTER (const.) 891.884
SAWMILL WORKER (sawmill) 667.782
SEWAGE-PLANT OPERATOR (sanitary ser.) 955.782
SLICING-MACHINE OPERATOR (bake. prod.) 521.885
THIOKOL OPERATOR (plastics mat.) 550.782
TIRE VULCANIZER (auto. serv.) 750.884
VARNISH MAKER (ink; paint & varn.) 553.782
WOODWORKING MACHINE OPERATOR (woodworking) 669.782

Opportunities for Special Worker Groups

Men are employed in about 70 percent of these jobs. Training for machine operators is included in the list of approved MDTA courses. On-the-job training is the usual method of gaining skills in these occupations.

MDTA training for production machine operators was being given in a number of locations during 1969. Seasonal employment patterns are characteristic of cannery and sawmill occupations in California.

Related California Occupational Guides

Coatings Industry Occupations (Paint and Varnish Manufacturing), No. 415; Fork Lift Operator, No. 190; Head Saw Operator (Sawyer), No. 321; Machine Tool Operators, No. 44; Water Treatment Plant Operator, No. 443.

Laborers, Except Farm and Mine

Job Outlook

This large group of workers, which averaged 300,000 in 1968, should number about 313,000 during 1975. The entire category, which comprised five percent of the State's employment in 1960 will have declined to 3.4 percent by 1975. Job opportunities, however, will be substantial over the forecast period. Added to the 13,000 new jobs from industrial expansion will be nearly 40,000 job opportunities to replace laborers leaving the State's labor force.

Most manufacturing industries will actually lose laborers over the forecast period. However, opportunities for laborers in construction and in trade and service industries will be substantial.

Representative DOT Titles in This Category

The occupations listed here are only a small fraction of the more than 2,000 job titles identified by census enumerators.

Carpenters' Helpers:	LABORER, CARPENTRY (const.) 860.887
Fishermen and Oystermen:	FISHERMAN, POT (fish.) 431.884 FISHERMAN, PURSE SEINE (fish.) 431.884
Garage Laborers, Carwashers and Greasers:	GARAGEMEN, INDUSTRIAL (auto. ser.) 915.884 STEAM CLEANER (auto. ser.) 915.887
Gardeners, Except Farm, and Groundskeepers:	GROUNDSKEEPER (any ind.) 407.884 LANDSCAPE GARDENER (agric.) 407.181 YARDMAN (dom. serv.) 304.887
Longshoremen and Stevedores:	HATCH TENDER (water trans.) 911.868 LONGSHOREMEN (water trans.) I 911.833
Lumbermen, Raftsmen, and Woodchoppers:	CHOKER MAN (logging) 942.887 FALLER (logging) 940.884 SWAMPER (logging) 949.887
Truck Driver's Helpers:	TRUCK DRIVER HELPER (any ind.) 905.887
Warehousemen, n.e.c.:	LABORER, STORES (any ind.) 922.887
Laborers, n.e.c.:	AIR-HAMMER OPERATOR (const.) 859.887 AUXILIARY EQUIPMENT TENDER (cement) 570.885 BOTTLE WASHER, MACHINE (any ind.) 529.885 FURNITURE MOVER (motor trans.) 909.887 KENNELMAN (agric.) 356.874 PAINTER HELPER (const.) 840.887

Opportunities for Special Worker Groups

Over 95 percent of all these jobs are filled by men. Many opportunities for entry level workers will be found among these jobs. Large numbers of skilled workers gained entry to their trades by this route. Opportunities for large numbers of students to find part-time and seasonal jobs will occur over the forecast period.

Related California Occupational Guides

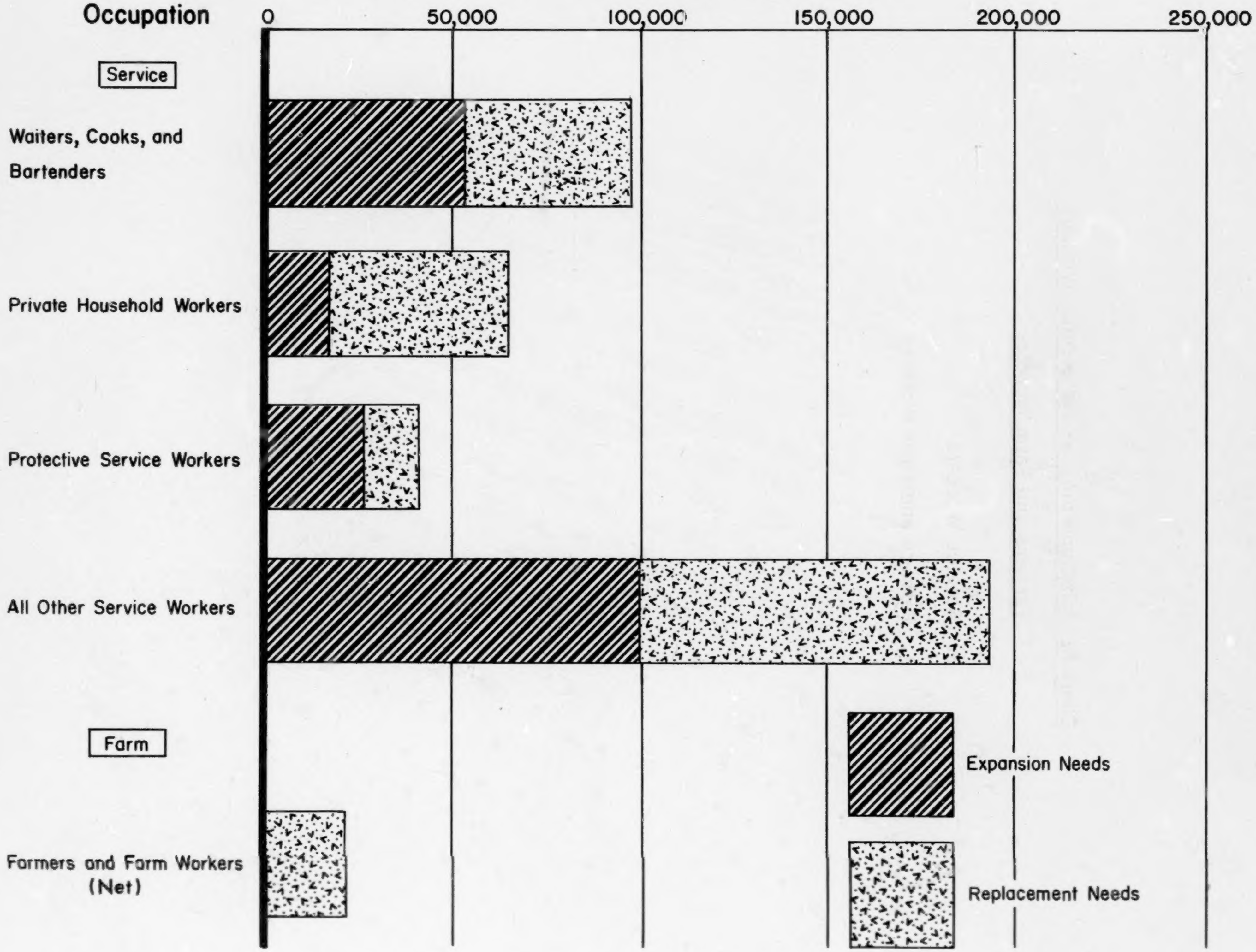
Groundsman-Gardener, No. 320; Kennelman, No. 403; Tuna Fisherman (Purse Seine), No. 333.

Chart F. Job Opportunities for Service Workers Farmers and Farm Workers

8. Service Workers
9. Farmers and Farm Workers

Chart F. Job Opportunities for Service Workers, Farmers, and Farm Workers

Total Number of Jobs from Industrial Expansion and from Replacement Needs, 1968-1975



8. Service Workers

Highlights

This category, in which manpower needs are estimated at about 390,000 between mid-1968 and mid-1975, will absorb large numbers of new workers. Most of these jobs require short training periods and a relatively low formal educational attainment.

Among the most promising of the specific occupational categories in terms of the volume of opportunities are waiters, cooks and bartenders with more than 95,000 new jobs; private household workers with nearly 65,000 additional jobs; and janitors with nearly 30,000 job opportunities. About 40,000 additional job opportunities will become available to the protective service workers group, which includes policemen, firemen, guards, and watchmen.

Among the health occupations which do not require several years of formal training are hospital and institutional attendants, with nearly 35,000 additional jobs projected, and practical nurses, with more than 25,000 job opportunities over the forecast period.

9. Farmers and Farm Workers

Highlights

Completing the list of the principal categories are net replacement needs of about 20,000 jobs on California farms during the forecast period. These job opportunities will occur despite the anticipated decline in total farm labor requirements over the same period. These occupational forecasts of additional farm jobs, which are based on average employment, will tend to be obscured at any given time by the very pronounced seasonal fluctuations and by the unusually high job turnover which is characteristic of the farm industry. They do, however, round out the labor force employment forecasts on a basis comparable to the estimates for other occupational categories.

See pages immediately following for additional detail on selected service and farming occupations.

Private Household Workers

Job Outlook

Average employment in this group of occupations increased from 130,000 in 1960 to over 150,000 in 1968. By 1975 the number of jobs for these workers in California should average 170,000. Besides the nearly 20,000 new jobs created mostly by increased population, there will be 45,000 additional jobs to replace private household workers who will leave the labor force during the forecast period.

All of these workers, by definition, are in private households, SIC 88. Forecasts of employment in this category are significantly influenced by the fact that many domestic workers have a tenuous attachment to the labor force. Each day worker may have a number of employers. These estimates will also be affected by the exclusion of 14 and 15 year olds from the labor force in the 1970 census. Although an adjustment for this exclusion has been made for total projected 1975 employment, the disproportionate effect on this group has not been measured.

Representative DOT Titles in This Category

Babysitters, private household:	NURSEMAID (dom. serv.) 307.878
Housekeepers, private household:	HOUSEKEEPER, HOME (dom. serv.) I 303.138
Laundresses, private household:	LAUNDRESS (dom. serv.) 302.887
Private Household Workers, n.e.c.:	COOK (dom. serv.) 305.281 DAY WORKER (dom. serv.) 301.887 DOMESTIC COUPLE (dom. serv.) 309.999 MAID, GENERAL (dom. serv.) 306.878 MAN-OF-ALL-WORK (dom. serv.) 304.887 MOTHER'S HELPER (dom. serv.) 306.878 VALET (dom. serv.) 309.878

Opportunities for Special Worker Groups

Women hold 95 percent of all domestic jobs in California. Many women who are secondary earners, or who have only a casual attachment to the labor force can supplement family earnings by performing work in domestic households. School girls may readily find occasional employment as sitters. (Gardening jobs and yard workers are included with the category Laborers, except Farm and Mine.)

During 1969, a surplus of maids and day workers was reported by several of the State's major labor market areas.

Related California Occupational Guides

Domestic Cook, No. 108; Domestic Service Worker, General, No. 395.

Firemen, Fire Protection

Job Outlook

Average 1968 employment, estimated at nearly 24,000, should increase to more than 30,000 during 1975. Added to the more than 6,000 new jobs will be replacement needs for about 2,000 firemen who will leave the State's labor force during the forecast period.

Nearly all job opportunities in this group will continue to be in State and local government. The few remaining opportunities will be scattered among other industries.

Representative DOT Titles in This Category

FIRE CHIEF (gov. ser.) 373.118
FIRE FIGHTER (any ind.) 373.884
FIRE FIGHTER, CRASH (air trans.) 373.884
FIRE MARSHAL (any ind.) 373.168
FIRE INSPECTOR (any ind.) 379.387

Opportunities for Special Worker Groups

Men hold practically all fire fighting jobs. Fire departments prefer men with military service because they are accustomed to discipline and team work. Entrance to these jobs is usually by competitive civil service examination.

Forest-fire fighters are not included with this category, because census enumerators counted them with foresters and conservationists, which are part of the Professional, Technical Workers, n.e.c. category. Many students and youths from disadvantaged groups will find seasonal job opportunities as forest-fire fighters during summer months.

In 1969, a federally funded MDTA class in fire fighting was established in Southern California.

Related California Occupational Guides

Fireman (City and Suburban), No. 241; Forest-Fire Fighter, No. 334.

Policemen, Marshals, Sheriffs

Job Outlook

Employment for law enforcement workers increased from an average of 32,000 in 1960 to nearly 50,000 in 1968. A further increase, to an average of more than 65,000 is forecast for 1975, so that about 17,000 new jobs will be created over the forecast period. An additional 4,500 jobs will have to be filled to replace peace officers who leave the State's labor force between 1968 and 1975.

About nine out of every ten of these workers are in government service. The remainder are scattered among most of the other industries, with business services, educational services, and the railroad industry accounting for many of these.

Representative DOT Titles in This Category

Policemen and Detectives:	BORDER PATROLMAN (gov. serv.) 375.868
	DESK OFFICER (gov. serv.) 375.138
	DETECTIVE (gov. serv.) 375.268
	FINGERPRINT CLASSIFIER (gov. serv.) 375.388
	HOUSE OFFICER (hotel & rest.) 376.268
	NARCOTICS INVESTIGATOR (gov. serv.) 375.268
	PARKING-ENFORCEMENT OFFICER (gov. serv.) 375.588
	PATROLMAN (gov. serv.) 375.268
	POLICE CHIEF (gov. serv.) 375.118
	SPECIAL AGENT, FBI (gov. serv.) 375.168
	STATE-HIGHWAY PATROLMAN (gov. serv.) 375.268
Sheriff, Bailiffs, Marshals and Constables:	BAILIFF (gov. serv.) 377.868
	SHERIFF, DEPUTY (gov. serv.) 377.868

Opportunities for Special Worker Groups

Although men hold most of these jobs, law enforcement agencies are hiring more women as matrons, meter maids, radio dispatchers and for other specialized jobs. There will continue to be many job openings in metropolitan areas for entry level workers who are able to pass rigid tests. Most of these jobs are a part of the civil service system.

During early 1969, a shortage of qualified applicants was reported by nearly all major labor market areas of the State.

Related California Occupational Guides

Fingerprint Examiner, No. 203; Police and Deputy Sheriff, No. 211; State Traffic Officer (The California Highway Patrolman), No. 307.

Guards, Watchmen

Job Outlook

The number of jobs in these occupations is increasing in California, but at a slow rate. From an average of 29,000 in 1968, an increase to 32,000 is projected for 1975. Added to the 3,000 new jobs from industrial expansion will be about 6,000 more from replacement needs over the forecast period, for a total from both of these sources of over 9,000 opportunities.

About one-quarter of the job opportunities will be in government and another quarter in business services. The remaining half will be in nearly all other industries, with significant numbers of these in aerospace industries; in finance, insurance and real estate; and in the entertainment industries.

Representative DOT Titles in This Category

Guards, watchmen, and doorkeepers:	ARMED GUARD (any ind.) 372.868 ARMORED-CAR GUARD (bus. ser.) 372.868 BODYGUARD (per. ser.) 372.868 CORRECTION OFFICER (gov. ser.) 372.868 GATEMAN (any ind.) 372.868 GUARD (any ind.) I 372.868 JAILER (gov. ser.) 372.868 LIFEGUARD (amuse. & rec.) 379.868 MERCHANT PATROLMAN (bus. ser.) 372.868 SECURITY INSPECTOR (gov. ser.) 372.868 WATCHMAN (any ind.) I 372.868
Watchmen (crossing) and bridge tenders:	BRIDGE OPERATOR (r.r. trans.) I 371.782 SCHOOL-CROSSING GUARD (gov. ser.) 371.868 TOLL-BRIDGE ATTENDANT (gov. ser.) 211.468 WATCHMAN, CROSSING (any ind.) 371.868

Opportunities for Special Worker Groups

More than nine out of ten of these jobs are filled by men. Employers give preference to retired military personnel when hiring. Government jobs in this classification must be filled by veterans, unless veterans are not available. The age of workers in most of these occupations is greater than average, so that replacement needs tend to be higher than for most groups in which a large proportion of men are employed.

During early 1969, a surplus of guards and watchmen was reported by several major California labor market areas.

Related California Occupational Guides

Beach Lifeguard, No. 341; Correctional Officer, No. 220; Guard, No. 75.

Bartenders

Job Outlook

The number of jobs in this occupation will increase from an average of about 23,000 in 1968 to 27,000 in 1975. In addition to the 4,000 new job opportunities which will result from industry expansion, there will be 3,500 opportunities resulting from replacement needs.

Nearly all bartenders are employed in eating and drinking places, an industry which tends to grow with increasing population. Most of the other employed bartenders work for hotels, recreation centers, and fraternal organizations.

Representative DOT Titles in This Category

BARTENDER (hotel & rest.) 312.878
SERVICE BARTENDER (hotel & rest.) 312.878
TAPMAN (hotel & rest.) 312.887

Opportunities for Special Worker Groups

The extent of union membership varies greatly among cities. Most organized bartenders belong to the Hotel and Restaurant Employees and Bartenders International Union. Several private schools offer training for this occupation. More than nine out of ten bartenders are men. California law prohibits women from serving "hard" liquor across a bar.

During 1969, a surplus of these workers was reported in several areas. Seasonal jobs in resort areas may offer opportunities for applicants who lack experience.

Cooks, Except Private Household

Job Outlook

Employment growth in these occupations, which increased from 48,000 in 1960 to an average of more than 70,000 in 1968, is expected to continue. An estimated 88,000 cooks will be needed by 1975. In addition to nearly 16,000 new jobs from industry growth, there will be 12,000 job opportunities resulting from replacement needs.

More than half the job opportunities for cooks will be in eating and drinking establishments. Substantial numbers will be hired by educational institutions, in the medical services industry and by hotels and nonprofit institutions. The remaining employment opportunities in these occupations will be scattered among most other California industries.

Representative DOT Titles in This Category

BAKER (hotel & rest.) 313.381
BAKER, PIZZA (hotel & rest.) 313.381
CHEF (hotel & rest.) 313.131
COMBINATION MAN (hotel & rest.) 314.878
COOK (hotel & rest.) 313.381
COOK (any ind.) 315.381
COOK, CHIEF (water trans.) 315.131
COOK, PASTRY (hotel & rest.) II 313.381
COOK, SHORT ORDER (hotel & rest.) 314.381
EXECUTIVE CHEF (hotel & rest.) 313.168
GARDE MANAGER (hotel & rest.) 313.781

Opportunities for Special Worker Groups

In California, jobs in these occupations are equally distributed among men and women. Worker organizations include the Cook's Association of the Pacific Coast, the Chef's Association of the Pacific Coast, and various locals of the Hotel and Restaurant Employees and Bartenders International Union.

Several federally funded MDTA courses have been established for cooks and closely related occupations. Chefs and other highly trained culinary specialists are in demand by employers. In early 1969, however, surpluses of short order cooks and culinary workers with marginal skills were reported in several of the State's major labor market areas.

Related California Occupational Guides

Chefs and Cooks (Fine Restaurants), No. 93; Short Order Cook (Class B Restaurants), No. 366.

Job Outlook

The number of jobs in these occupations has increased rapidly, from an average of less than 12,000 in 1960 to an average more than 19,000 in 1968. This rate of growth should be maintained through 1975, when an average of 26,000 jobs may be reached. Added to the nearly 7,000 jobs which will be added to the work force by industry growth will be an estimated 4,000 opportunities resulting from counter and fountain workers leaving the labor force between mid-1968 and mid-1975.

Job opportunities will be concentrated in eating and drinking places, educational institutions, and miscellaneous retail establishments. A few will occur in most of the remaining industry groups.

Representative DOT Titles in This Category

COUNTER GIRL, CAFETERIA (hotel & rest.) 311.878
COUNTER MAN, LUNCHROOM OR COFFEE SHOP (hotel & rest.) 311.878
FOUNTAIN MAN (hotel & rest.) 319.878
FLOOR GIRL, CAFETERIA (hotel & rest.) 311.878
STEAM-TABLE ATTENDANT (hotel & rest.) 311.878

Opportunities for Special Worker Groups

About four out of five of these jobs are held by women. Women are likely to continue to fill most of the job opportunities. Employers prefer to hire experienced workers, who are not always available. Therefore, entry level workers should continue to find jobs. Extremely high turnover rates are a factor in sustaining the demand for workers in these and similar occupations.

In 1969, a federally funded MDTA course for lunchroom counterman was established in the East Bay Skill Center.

Waiters and Waitresses

Job Outlook

Jobs in California for waiters and waitresses will increase from an average of 121,000 in 1968 to a projected 148,000 during 1975. Added to these 27,000 new jobs will be replacement needs estimated at 24,000.

Job opportunities for most of these workers will be in eating and drinking places, hotels, amusement and recreation facilities, and in educational services. The remaining job opportunities will be widely scattered among other industry groups.

Representative DOT Titles in This Category

BARMAID (hotel & rest.) 311.878
CAR HOP (hotel & rest.) 311.878
HOSTESS, RESTAURANT OR COFFEE SHOP (hotel & rest.) 310.868
MESSMAN (water trans.) 350.878
WAITER, FORMAL (hotel & rest.) 311.878
WAITER, INFORMAL (hotel & rest.) 311.878

Opportunities for Special Worker Groups

Women hold more than eight out of ten of these jobs, and are likely to continue to predominate, except in some specialized occupations. There will continue to be many opportunities for younger workers who can benefit from on-the-job training. Many part-time jobs will also become available during the forecast period.

During early 1969, several areas of the State reported a surplus of applicants for job openings for waitresses. However, qualified workers with their own transportation and who are willing to work all shifts have little difficulty in finding work. A federally funded MDTA course for waiters and waitresses, was established in the Sacramento Area in 1968.

Related California Occupational Guide

Waitress, No. 42.

Attendants, Hospital and Other Institutions

Job Outlook

This group of occupations has been and should continue to be among the most rapidly growing categories. From an average of slightly over 25,000 jobs in 1960 these occupations doubled by 1968. Projections for 1975 place the average number of jobs at more than 75,000 for a seven-year gain of 25,000. Replacement needs for hospital attendants over the forecast period should add another 9,000 jobs.

Nearly all the job opportunities for this group of workers will be in medical services, although nonprofit institutions (SIC 86) and educational services will provide a small proportion of the opportunities.

Representative DOT Titles in This Category

ATTENDANT, PHYSICAL THERAPY (medical ser.) 355.878
FIRST-AID ATTENDANT (any ind.) 354.878
FORMULA ROOM WORKER (medical ser.) 317.887
HOSPITAL ATTENDANT (medical ser.) 355.878
NURSE AIDE (medical ser.) 355.878
NURSE AIDE, REST HOME (medical ser.) 355.878
ORDERLY (medical ser.) 355.878
PHARMACY HELPER (medical ser.) 074.387
PSYCHIATRIC AIDE (medical ser.) 355.878
STERILIZER (drug. prep.; medical ser.) 399.885
TRAY-LINE WORKER (medical ser.) 355.878
VETERINARY-HOSPITAL ATTENDANT (medical ser.) 356.874

Opportunities for Special Worker Groups

Nearly eight out of ten jobs in this group of occupations are held by women. The skills required in most of these occupations can be learned with only short periods of training, often on the job. Women, particularly secondary earners without previous labor force experience, may find many opportunities in this group of occupations. Despite recent cutbacks, there should be many opportunities over the forecast period for psychiatric aides in State civil service under the title of psychiatric technician trainee.

Federally funded MDTA courses for nurse aides and orderlies were being given in many locations throughout the State during 1969. At the same time, a surplus of applicants for jobs in these two occupations were reported by several major areas of the State. It is likely, however, that the increasing need for these workers will absorb temporary surpluses over the forecast period.

Related California Occupational Guides

Nurse Aide (Hospital Orderly), No. 442; Psychiatric Technician Trainee, No. 95; Veterinary Hospital Attendant, No. 402.

Charwomen and Cleaners

Job Outlook

Jobs in California for charwomen and cleaners should increase moderately over the forecast period from an average of about 16,000 in 1968 to nearly 19,000 in 1975. An additional 3,000 jobs will become available to meet replacement needs for workers in these occupations who will leave the State's work force between 1968 and 1975.

Most of these workers are employed in the service industries. Business services employ the largest group, with medical service, hotels, and educational services also accounting for large numbers of charwomen and cleaners. This category is also represented in nearly all of the other industries. Financial and eating and drinking establishments provide substantial numbers of jobs, as do the other trade industries. Most of the remaining jobs are scattered among manufacturing industries, government, communications and the construction industries.

Representative DOT Titles in This Category

CHARWOMEN (any ind.) 381.887
CLEANER, LABORATORY EQUIPMENT (any ind.) 381.887
FLOOR WAXER (any ind.) 389.887
PAINT CLEANER (any ind.) 381.887
VACUUM-CLEANER OPERATOR (any ind.) 389.883
VENETIAN-BLIND MAINTENANCE MAN (any ind.) 739.887
WINDOW CLEANER (any ind.) 389.887

Opportunities for Special Worker Groups

Employers of workers in this category employ men and women in equal numbers. No educational requirements are required for any of these jobs. Although most of the occupations in this category are considered as "dead end" jobs, some jobs, particularly those which are part time may offer opportunities for semi-retired individuals and secondary wage earners.

During early 1969, surpluses of applicants for jobs in these occupations were reported in the Los Angeles and the San Francisco-Oakland labor market areas.

Janitors and Sextons

Job Outlook

Only a moderate increase in this occupation is foreseen over the forecast period. The total number of jobs will increase from an average of 107,000 in 1968 to 114,000 in 1975, providing about 7,000 new jobs. Added to this, however, will be an additional 21,000 job opportunities to replace those who will have left California's labor force during the seven-year forecast period.

Nearly half the job opportunities in these occupations will be in schools, with significant numbers in nonprofit institutions, business services, and in the finance, insurance, and real estate industry. The remaining opportunities will be widely scattered among other industries.

Representative DOT Titles in This Category

CUSTODIAN (any ind.) I 381.887
JANITOR (any ind.) I 382.884
MAINTENANCE MAN, BUILDING (any ind.) 899.381
MANAGER, RESIDENT (any ind.) 382.884
PORTER (any ind.) I 381.887
SEXTON (nonprofit organ.) 389.887

Opportunities for Special Worker Groups

Nearly nine out of ten of these jobs are filled by men. All government agencies give preference to veterans. Federal positions must be filled by veterans unless none apply for the job. Many semi-retired older men may find part-time job opportunities as janitors.

Related California Occupational Guide

Janitor (Porter), No. 88.

Nurses, Practical

Job Outlook

This rapidly growing occupation increased from an average of 20,000 jobs in 1960 to 37,000 by 1968. A further increase to an average of nearly 54,000 is projected for 1975. Added to the 16,000 new jobs from industry expansion during the seven-year forecast period will be an additional 9,500 jobs to replace practical nurses who will leave the State's labor force between mid-1968 and mid-1975.

Representative DOT Titles in This Category

NURSE, LICENSED PRACTICAL (medical ser.) 079.378
NURSE, PRACTICAL (medical ser.) 354.878

In California, licensed members of the profession are known by the title LICENSED VOCATIONAL NURSE (LVN).

The count for this category, based on census titles, includes both licensed and unlicensed practical nurses, as well as certain other titles which are not defined as separate occupations in the third edition DOT.

Opportunities for Special Worker Groups

The vast majority of LVN's (over 95 percent) are women. Admission to the course of study for licensed vocational nursing in California requires completion of at least the tenth grade, or passing an equivalency test. Applicants for training must be at least 17 years old. Military service in a medical branch of the armed forces is qualifying, but the candidate must still pass the State examination.

Federally funded MDTA courses are being given in several California cities. In early 1969 shortages of applicants for current job openings existed in all the major California labor market areas.

Related California Occupational Guides

Licensed Vocational Nurse, Nos. 313 and 205.

Other Service Workers, n.e.c.

Job Outlook

Aggregate employment for this category, which is a catchall group of service occupations, averaged about 185,000 in 1960. By 1968, the number had increased to 254,000, while the projected 1975 average is set at about 313,000.

Nearly 50,000 new jobs will be created by industrial expansion, while another 48,000 jobs will result from workers leaving the labor force. Job opportunities will be concentrated in the service industries. The majority will be in personal services. Medical services, educational services, eating and drinking places, and hotels will account for most of the remaining job opportunities.

Representative DOT Titles in This Category

Attendants, prof. and pers. service, n.e.c.:	AMBULANCE ATTENDANT (medical ser.) 355.878 LOCKER-ROOM ATTENDANT (per. ser.) 358.878
Attendants, recreation and amusement:	BOAT-DOCK OPERATOR (amuse. & rec.) 344.867 TICKET TAKER (amuse. & rec.) 344.868
Barbers:	BARBER (per. ser.) 330.371
Chambermaids and Maids, exc. pvt. household:	MAID (any ind.) II 323.887
Hairdressers and Cosmetologists:	COSMETOLOGIST (per. ser.) 332.271
Housekeepers and Stewards, exc. pvt. household:	AIRLINE STEWARDESS (air trans.) 352.878 LINEN-ROOM ATTENDANT (hotel & rest.; med. ser.) 223.387
Kitchen Workers, n.e.c., pvt. household:	KITCHEN HELPER (hotel & rest.) 318.887
Porters:	BAGGAGE PORTER (hotel & rest.) 324.878 SKYCAP (air trans.) 357.878
Ushers:	USHER (amuse. & rec.) 344.878
Service Workers, exc. pvt. household, n.e.c.:	BELLMAN (hotel & rest.) 324.878 BUSBOY (hotel & rest.) 311.878 DOORMAN (any ind.) 324.878

Opportunities for Special Worker Groups

Students and other labor force entrants will find many job opportunities in these service jobs. Many part-time and temporary jobs may also be found among these occupations. There will also be many opportunities for women who are secondary family wage earners.

Several MDTA projects were providing training for porters during 1969, and one project was established for cosmetologists. No surpluses or shortages of applicants were reported for most of these occupations during early 1969. However, large surpluses of applicants for jobs as porters were reported in many of the State's labor market areas.

Related California Occupational Guides

Airline Stewardess, No. 79; Barber, No. 78; Beauty Operator, No. 58; Checkroom, Locker Room and Rest Room Attendants, No. 437; Kitchen Helper, No. 331.

Farmers and Farm Workers

Job Outlook

Farming occupations are one of the few major categories in California with a declining number of workers. From an annual average of 307,000 in 1960, the number of farm workers dropped to about 273,000 in 1968. A further loss to an average of 239,000 is projected for 1975, for a net decrease of about 34,000 over the seven-year period. During the 1968-1975 period, nearly 55,000 California farm workers will leave the State's labor force, leaving a net of only about 20,000 job opportunities for workers not presently employed in farm jobs.

Representative DOT Titles in This Category

Farmers (owners and tenants):	FARMER, DAIRY (agric.) 411.181 NURSERYMAN (agric.) 406.168 GRAPE GROWER (agric.) 404.181
Farm Foremen:	FARM FOREMAN (agric.) 429.131 STOCK-RANCH FOREMAN (agric.) 413.131
Farm Laborers (Wage and unpaid family workers):	CREW LEADER (agric.) 180.168 FARM COUPLE (agric.) 423.999 FARMHAND, VEGETABLE (agric.) II 403.887 HARVEST HAND, FRUIT (agric.) 404.887 IRRIGATOR (agric.) 422.887
Farm Service Workers, Self-employed:	SHEEP SHEARER (agric.) 469.884 THRESHER (agric.) 424.782

Not all persons in the farming industry are represented in this occupational estimate. In 1968, for example, only about 85 percent of all workers in the agriculture industry (SIC 01 & 07) are included in the occupational count of farmers and farm workers. The remainder are scattered among other occupational groups.

Opportunities for Special Worker Groups

California agriculture, because of its highly seasonal nature, will continue to offer many temporary job opportunities for students, for transients, and for others who are in the State's labor force only part of the year. Average figures, which serve as accurate indicators for most industries, tend to obscure the very substantial seasonal job opportunities in agriculture. The unusually high rate of turnover in farm jobs, and characteristic work patterns of migrant farm workers are also obscured by averages.

Several MDTA projects have been established for California farming occupations. Most of these are for farm equipment operators.

Related California Occupational Guides

Off-The-Ground Date Worker, No. 418; Poultry Farmhand, No. 384; Sheepherder, No. 335; Vineyard Manager, No. 274.

PART IV APPENDIX

Assumptions

National. These projections are dependent to a considerable extent on national assumptions, as set forth in Tomorrow's Manpower Needs.

With respect to the level of economic activity, the civilian labor force is projected at 91.4 million in 1975, with a national unemployment rate of 3%. The target year is assumed to be one of peace-time conditions, similar to those immediately prior to the Vietnam buildup. 1975 Armed Forces are set at 2.7 million, which represents no significant change from the 1964 level.

Some other major assumptions underlying the national manpower projections are:

(1) No war or cataclysmic event will substantially alter the rate and nature of economic growth.

(2) Economic and social patterns and relationships in our society, including patterns of consumption, will continue to change at about the same rate as they have in the recent past.

(3) Scientific and technological advances of recent years will continue and R & D expenditures will continue to grow, although at a slower rate than during the decade of the 1950's and early 1960's.

California. This set of projections assumes a 1975 average civilian labor force of 9,600,000 and an unemployment rate of about 4.5%. Average 1975 employment is estimated at 9,160,000. Both industry and occupational figures were forced to this total. Certain industries which are not expected to follow past trends have a significant effect on the projections. Among these are construction, in which a recovery from its recent depressed level is forecast, and aerospace, which is particularly susceptible to changing defense requirements. Of the aerospace industries, ordnance is assumed to have a slight drop between 1967 and 1975, while aircraft manufacturing should have a 1975 employment level slightly above 1967.

Method

1. General Description of Methods

These projections are based on data from the California Human Relations Agency (Department of Employment and Industrial Relations), the U.S. Census, and the Bureau of Labor Statistics. The technique used is essentially that described as "Method A" in the 1967 draft of the BLS publication Tomorrow's Manpower Needs, and in Tomorrow's Manpower Needs, Bulletin No. 1606, Volume I - IV, February 1969 (TMN).

Estimates of total jobs use national matrices for both the 1960 base period and the 1975 target date. No special State matrix is required. Demand for each of about 150 occupational categories is computed by applying national industry-occupation ratios and change factors (percent change over the 15-year period) to the appropriate California employment-by-industry estimates. To accomplish this, a series of work papers were developed to produce benchmark figures and projections for:

1. Employment by Industry, 1960, 1968 and 1975.[1]
2. Employment by Occupation, 1960, 1968 and 1975.[1]
3. Replacement needs from deaths and retirements, by occupation.[1]

Prior to the critical task of estimating projected industry employment, a series of first approximations were obtained by using least squares trend lines based on ten years of wage and salary employment. The initial projections of wage and salary employment and total employment for each industry were then subjected to a detailed analysis. National industry trends, State industry projections previously attempted by other agencies, and the judgment of experienced labor market analysts were considered in the evaluation process. About one-third of the projections required some degree of modification. Special additional work sheets were prepared for occupations and industries for which complete information was lacking, or which did not conform to the general pattern.

Dissimilarities in data from the various sources are a major consideration in these projections. Individual adjustments for the various factors contributing to these dissimilarities were not attempted; instead, derived State totals were "forced" to Department of Industrial Relations-Department of Employment totals. Figures for individual occupations or industries were then corrected by applying the appropriate adjustment ratio.

Among the factors which contribute to the dissimilarities in the estimates are the following:

(1) April 1960 figures (census) vs. year average figures (DIR & TMN).

(2) Number of individuals (census) vs. number of jobs (DIR).

(3) Multiple job holders counted only once in the census vs. total number of jobs. DIR figures, based on establishment reporting, may count individuals more than once.

(4) Part-time and intermittent workers, many of whom are likely to be missed in the census, vs. the average number of such workers, which are accounted for in establishment reports (DIR).

---

[1] Reporting time intervals: In this report, benchmark figures for 1960, estimates for 1968, and projections for 1975 are measured as year averages. As a convention, time intervals between years are measured from the mid-points of the two years in question. Thus, the forecast period is from mid-1968 to mid-1975.

(5) Absences from work. Individuals with a job attachment, but not at work, who are included with the employed in the census, vs. exclusion of these workers under certain conditions in establishment reports (DIR).

(6) Census occupational figures, which exclude certain "occupation INA" individuals, are adjusted to occupational counts which include the "occupation INA" category (TMN).

(7) 1960 labor force includes 14 and 15 year olds, which are excluded from the 1975 labor force projections.

(8) The last, and perhaps most significant, difference between data derived from establishment reporting sources (DIR), and TMN data (based on census reports) originates from the technique of applying inflation ratios to account for self-employed and unpaid family workers. For each industry (except Agriculture and Government employment) this ratio is the quotient of total employment divided by wage and salary employment. Both figures are reported in Table 129 of census report PC (1) 6 D California detailed characteristics.

In the aggregate, these factors tend to offset each other. For each set of work papers, the adjustment ratios approach unity, or are of small magnitude.

2. Summarizing the Information

Three statistical tables summarize the principal findings. These are entitled:

Table 1. Job Opportunities from Industrial Expansion and Replacement Needs - California, 1968-1975.

Table 2. Jobs by Detailed Occupation - California, 1960, 1968 and Projected to 1975.

Table 3. Distribution of Jobs by Occupational Category, 1960, 1968 and 1975.

As a final step, derived figures for new jobs and for replacement needs for each occupation were analyzed. Wherever possible, the estimates were compared with those for the nation and for other states having published projections. A few of the estimates were either modified as a result of this analysis, or represent a consolidation of occupations which were originally projected separately.

This effort represents only a start. By the time 1970 census data are released, methods will have been developed to use EDP equipment to the fullest extent possible. Access to coded 1970 census data will result in additional occupational detail. The information in this report, therefore, constitutes the first of a series, which will be improved as better information becomes available.

Table 1
Job Opportunities from Industrial Expansion and Replacement Needs – California, 1968–1975

Occupational Category	Job Opportunities, 1968 to 1975		
	New Jobs Created by Industrial Expansion	Replacement Needs from Deaths and Retirements	Total Jobs from These Sources
Total, All Occupations	1,436,000	1,260,900	2,696,900
Professional, Technical and Kindred	361,700	172,000	533,700
Engineers, Technical	50,600	15,800	66,400
Engineers, Aeronautical	4,100	1,600	5,700
Engineers, Chemical	1,000	400	1,400
Engineers, Civil	8,100	3,100	11,200
Engineers, Electrical	13,600	3,300	16,900
Engineers, Industrial	5,500	1,400	6,900
Engineers, Mechanical	7,200	2,800	10,000
Engineers, Metallurgical	700	300	1,000
Engineers, Mining	100	200	300
Other Engineers, Technical	10,300	2,700	13,000
Natural Scientists	15,700	4,000	19,700
Chemists	4,200	1,200	5,400
Agricultural Scientists	900	400	1,300
Biological Scientists	1,900	600	2,500
Geologists and Geophysicists	600	200	800
Mathematicians	3,800	800	4,600
Physicists	3,600	500	4,100
Other Natural Scientists	700	300	1,000
Technicians Exc. Medical and Dental	45,900	11,300	57,200
Draftsmen	7,200	2,800	10,000
Surveyors	1,900	600	2,500
Radio Operators	400	200	600
Technicians, Other	36,400	7,700	44,100
Medical and Other Health Workers	67,000	37,700	104,700
Dentists	2,100	2,000	4,100
Dietitians and Nutritionists	400	600	1,000
Nurses, Professional	23,200	16,700	39,900
Optometrists	400	400	800
Pharmacists	700	2,000	2,700
Physicians and Surgeons, Osteopaths	10,100	5,300	15,400
Psychologists	2,100	600	2,700
Technicians, Medical and Dental	26,500	7,200	33,700
Veterinarians	500	200	700
Other Medical and Health Workers	1,000	2,700	3,700
Teachers	80,300	44,900	125,200
Teachers, Elementary	12,300	22,400	34,700
Teachers, Secondary	25,800	11,800	37,600
Teachers, Other Exc. College	25,300	5,900	31,200
Teachers, College	16,900	4,800	21,700

Table 1 (continued)

Occupational Category	Job Opportunities, 1968 to 1975		
	New Jobs Created by Industrial Expansion	Replacement Needs from Deaths and Retirements	Total Jobs from These Sources
Social Scientists	1,600	800	2,400
Economists	400	200	600
Statisticians and Actuaries	900	500	1,400
Other Social Scientists	300	100	400
Other Prof., Tech., and Kindred	100,600	57,500	158,100
Accountants and Auditors	7,500	9,300	16,800
Airplane Pilots and Navigators	2,400	600	3,000
Architects	200	600	800
Artists, Athletes, Entertainers	18,100	13,200	31,300
Clergymen	1,900	2,800	4,700
Designers, Exc. Design Draftsmen	3,100	1,500	4,600
Editors and Reporters	1,700	2,000	3,700
Lawyers and Judges	3,300	3,800	7,100
Librarians	2,800	2,600	5,400
Personnel and Labor Relations Workers	4,400	2,500	6,900
Photographers	600	1,000	1,600
Social and Welfare Workers, n.e.c.	6,100	3,500	9,600
Professional, Technical Workers, n.e.c.	48,500	14,100	62,600
Managers, Officials and Proprietors (Exc. Farm)	138,900	154,000	292,900
Conductors, Railroad	200	500	700
Creditmen	3,800	1,200	5,000
Officers, Pilots, Engineers, Ship	– 500	600	100
Purchasing Agents	6,000	2,900	8,900
Postmasters and Assistants	– 100	400	300
Managers, Officials, Proprietors, n.e.c.	129,500	148,400	277,900
Construction	22,600	10,500	33,100
Manufacturing	6,400	16,800	23,200
Trade	31,300	63,800	95,100
Finance, Insurance, and Real Estate	30,700	16,200	46,900
Services	25,300	25,500	50,800
All Other Industries	13,200	15,600	28,800
Clerical and Kindred Workers	309,200	271,300	580,500
Stenos, Typists, and Secretaries	79,300	79,500	158,800
Office Machine Operators	38,700	14,800	53,500
Other Clerical and Kindred Workers	191,200	177,000	368,200
Bookkeepers, Hand	13,800	18,400	32,200
Bank Tellers	11,600	5,300	16,900
Cashiers	24,900	12,400	37,300
Mail Carriers	5,400	2,600	8,000
Postal Clerks	1,000	3,100	4,100
Shipping and Receiving Clerks	300	3,800	4,100
Telephone Operators	3,500	11,000	14,500

Table 1 (continued)

Occupational Category	Job Opportunities, 1968 to 1975		
	New Jobs Created by Industrial Expansion	Replacement Needs from Deaths and Retirements	Total Jobs from These Sources
Other Clerical and Kindred Workers (cont.)			
Clerical and Kindred Workers, n.e.c.	130,700	120,400	251,100
Manufacturing	8,900	23,900	32,800
Trans., Communication, and Utilities	11,100	14,800	25,900
Trade	24,300	19,500	43,800
Finance, Insurance, and Real Estate	9,200	13,000	22,200
Services	63,900	30,700	94,600
Government (Administrative)	8,900	15,900	24,800
All Other Industries	4,400	2,600	7,000
Sales Workers	94,800	91,300	186,100
Insurance Agents and Brokers	7,400	5,900	13,300
Real Estate Agents and Brokers	13,100	11,500	24,600
Other Sales Workers, n.e.c.	74,300	73,900	148,200
Manufacturing	6,600	8,400	15,000
Trade	59,600	60,200	119,800
All Other Industries	8,100	5,300	13,400
Craftsmen, Foremen and Kindred Workers	190,700	133,900	324,600
Construction Craftsmen	52,200	39,600	91,800
Carpenters	10,600	12,300	22,900
Brick Masons, Stone, Tile Setters	2,100	1,300	3,400
Cement and Concrete Finishers	3,700	1,200	4,900
Electricians	7,400	6,300	13,700
Excavating, Grading Machine Operators	8,200	2,600	10,800
Painters and Paper Hangers	8,000	8,300	16,300
Plasterers	2,000	1,200	3,200
Plumbers and Pipefitters	7,100	4,700	11,800
Roofers and Slaters	1,600	600	2,200
Structural Metalworkers	1,500	1,100	2,600
Foremen, n.e.c.	28,900	17,800	46,700
Metalworking Craftsmen, Exc. Mechanics	3,600	16,500	20,100
Skilled Machining Workers	– 1,100	8,400	7,300
Blacksmiths, Forgemen, Hammermen	– 300	400	100
Boilermakers	200	500	700
Heat Treaters, Annealers, Temperers	0	200	200
Millwrights	500	500	1,000
Molders, Metal (Exc. Coremakers)	100	500	600
Patternmakers, Metal and Wood	800	700	1,500
Rollers and Roll Hands	200	300	500
Sheet Metal Workers	3,100	2,700	5,800
Toolmakers, Diemakers, Setters	100	2,300	2,400

Table 1 (continued)

Occupational Category	Job Opportunities, 1968 to 1975		
	New Jobs Created by Industrial Expansion	Replacement Needs from Deaths and Retirements	Total Jobs from These Sources
Mechanics and Repairmen	74,700	32,700	107,400
Airplane Mechanics and Repairmen	3,900	3,200	7,100
Motor Vehicles Mechanics	16,500	8,600	25,100
Office Machine Mechanics	3,500	700	4,200
Radio and TV Mechanics	2,300	1,300	3,600
Railroad and Car Shop Mechanics	200	500	700
Other Mechanics and Repairmen	48,300	18,400	66,700
Printing Trades Craftsmen	3,500	4,300	7,800
Compositors and Typesetters	– 500	2,500	2,000
Electrotypers and Stereotypers	– 200	100	– 100
Engravers, Exc. Photoengravers	300	200	500
Photoengravers and Lithographers	2,000	500	2,500
Pressmen and Plate Printers	1,900	1,000	2,900
Trans. and Public Utility Craftsmen	7,300	3,700	11,000
Linemen and Servicemen	7,600	2,800	10,400
Locomotive Engineers	300	700	1,000
Locomotive Firemen	– 600	200	– 400
Other Craftsmen and Kindred Workers	20,500	19,300	39,800
Bakers	100	1,600	1,700
Cabinetmakers	1,200	1,500	2,700
Cranemen, Derrickmen, Hoistmen	2,200	1,100	3,300
Glaziers	1,200	300	1,500
Jewelers and Watchmakers	800	600	1,400
Millers	– 100	100	0
Opticians and Lens Grinders	300	300	600
Stationary Engineers	800	4,000	4,800
Inspectors, Log and Lumber	200	400	600
Inspectors, Other	2,800	1,500	4,300
Upholsterers	2,100	1,200	3,300
Craftsmen and Kindred Workers, n.e.c.	8,900	6,700	15,600
Operatives and Kindred Workers	165,100	150,000	315,100
Selected Trans. and Utility Operators	39,300	26,900	66,200
Drivers, Bus, Truck, Tractor	28,300	18,000	46,300
Deliverymen, Routemen, Cab Drivers	10,800	7,200	18,000
Brakemen and Switchmen, R.R.	900	900	1,800
Power Station Operators	100	300	400
Sailors and Deck Hands	– 800	500	– 300
Semiskilled Metalworking Occupations	12,400	15,800	28,200
Assemblers, Metalworking	6,600	10,700	17,300
Furnacemen, Smeltermen, Pourers	100	300	400
Heaters, Metal	0	100	100
Welders and Flame Cutters	5,700	4,700	10,400

Table 1 (continued)

Occupational Category	Job Opportunities, 1968 to 1975 New Jobs Created by Industrial Expansion	Replacement Needs from Deaths and Retirements	Total Jobs from These Sources
Semiskilled Textile Occupations	3,900	7,400	11,300
Knitters, spinners, weavers	100	100	200
Sewers and Stitchers, Manufacturing	3,800	7,300	11,100
Asbestos and Insulation Workers	300	200	500
Other Operatives and Kindred	109,200	99,700	208,900
Auto Service and Parking Attendants	17,400	3,100	20,500
Blasters and Powdermen	0	0	0
Laundry and Dry Cleaning Workers	6,400	8,400	14,800
Mine Operatives and Laborers, n.e.c.	– 900	1,300	400
Meat Cutters, Exc. Meat Packing	2,900	3,100	6,000
Other Operatives, n.e.c.	83,400	83,800	167,200
Construction	8,500	2,700	11,200
Manufacturing	50,900	61,000	111,900
Trade	13,100	9,400	22,500
Services	8,900	6,200	15,100
All Other Industries	2,000	4,500	6,500
Service Workers	197,200	194,400	391,600
Private Household Workers	17,800	46,200	64,000
Protective Service Workers	26,800	12,800	39,600
Firemen, Fire Protection	6,500	2,200	8,700
Policemen, Marshals, Sheriffs	17,100	4,500	21,600
Guards, Watchmen	3,200	6,100	9,300
Waiters, Cooks, and Bartenders	52,900	44,200	97,100
Bartenders	4,000	3,500	7,500
Cooks, Exc. Private Household	15,700	12,400	28,100
Counter and Fountain Workers	6,700	3,900	10,600
Waiters and Waitresses	26,500	24,400	50,900
Other Service Workers	99,700	91,200	190,900
Attendants, Hospital and Other Institutions	24,800	9,200	34,000
Charwomen and Cleaners	2,600	2,900	5,500
Janitors and Sextons	7,200	21,400	28,600
Nurses, Practical	16,400	9,400	25,800
Other Service Workers, n.e.c.	48,700	48,300	97,000
Laborers, Except Farm and Mine	12,700	39,300	52,000
Farmers and Farm Workers	– 34,300	54,700	20,400

Table 2
Jobs by Detailed Occupation – California, 1960, 1968, and Projected to 1975

Occupational Category	1960	1968	1975	New Jobs 1968–1975
Total, All Occupations	5,933,000	7,724,000	9,160,000	1,436,000
Professional, Technical and Kindred	814,900	1,275,300	1,637,000	361,700
Engineers, Technical	119,500	176,100	226,700	50,600
Engineers, Aeronautical	15,600	19,900	24,000	4,100
Engineers, Chemical	3,500	4,900	5,900	1,000
Engineers, Civil	20,800	25,400	33,500	8,100
Engineers, Electrical	29,200	46,100	59,700	13,600
Engineers, Industrial	8,700	15,000	20,500	5,500
Engineers, Mechanical	21,000	31,000	38,200	7,200
Engineers, Metallurgical	1,800	2,800	3,500	700
Engineers, Mining	1,300	1,400	1,500	100
Other Engineers, Technical	17,600	29,600	39,900	10,300
Natural Scientists	26,700	44,400	60,100	15,700
Chemists	8,300	13,400	17,600	4,200
Agricultural Scientists	2,500	3,600	4,500	900
Biological Scientists	2,900	5,000	6,900	1,900
Geologists and Geophysicists	1,700	2,400	3,000	600
Mathematicians	4,400	8,100	11,900	3,800
Physicists	4,500	8,400	12,000	3,600
Other Natural Scientists	2,400	3,500	4,200	700
Technicians Exc. Medical and Dental	91,600	142,100	188,000	45,900
Draftsmen	26,600	36,800	44,000	7,200
Surveyors	5,500	7,300	9,200	1,900
Radio Operators	1,700	2,400	2,800	400
Technicians, Other	57,800	95,600	132,000	36,400
Medical and Other Health Workers	132,100	217,000	284,000	67,000
Dentists	9,000	13,300	15,400	2,100
Dietitians	1,800	2,700	3,100	400
Nurses, Professional	51,700	83,700	106,900	23,200
Optometrists	2,100	3,000	3,400	400
Pharmacists	9,500	11,100	11,800	700
Physicians and Surgeons, Osteopaths	25,100	39,900	50,000	10,100
Psychologists	2,600	4,900	7,000	2,100
Technicians, Medical and Dental	21,900	46,500	73,000	26,500
Veterinarians	1,600	2,200	2,700	500
Other Medical and Health Workers	6,800	9,700	10,700	1,000
Teachers	172,100	289,200	369,500	80,300
Teachers, Elementary	83,500	128,000	140,300	12,300
Teachers, Secondary	52,300	92,500	118,300	25,800
Teachers, Other Exc. College	16,400	28,600	53,900	25,300
Teachers, College	19,900	40,100	57,000	16,900

Table 2 (continued)

Occupational Category	1960	1968	1975	New Jobs 1968–1975
Social Scientists	4,100	5,900	7,500	1,600
Economists	1,300	1,800	2,200	400
Statisticians and Actuaries	2,300	3,300	4,200	900
Other Social Scientists	500	800	1,100	300
Other Prof., Tech., and Kindred	268,800	400,600	501,200	100,600
Accountants and Auditors	49,400	63,100	70,600	7,500
Airplane Pilots and Navigators	4,600	8,600	11,000	2,400
Architects	4,100	5,200	5,400	200
Artists, Athletes, Entertainers	61,300	89,700	107,800	18,100
Clergymen	12,900	16,800	18,700	1,900
Designers, Exc. Design Draftsmen	8,500	12,800	15,900	3,100
Editors and Reporters	10,200	13,000	14,700	1,700
Lawyers and Judges	18,700	25,000	28,300	3,300
Librarians	8,200	13,400	16,200	2,800
Personnel and Labor Relations Workers	11,700	17,200	21,600	4,400
Photographers	6,500	7,900	8,500	600
Social and Welfare Workers, n.e.c.	13,100	20,300	26,400	6,100
Professional, Technical Workers, n.e.c.	59,600	107,600	156,100	48,500
Managers, Officials and Proprietors (Exc. Farm)	729,100	913,200	1,052,100	138,900
Conductors, Railroad	2,100	1,800	2,000	200
Creditmen	5,400	9,200	13,000	3,800
Officers, Pilots, Engineers, Ship	3,300	3,400	2,900	– 500
Purchasing Agents	14,400	21,500	27,500	6,000
Postmasters and Assistants	1,700	1,600	1,500	– 100
Managers, Officials, Proprietors, n.e.c.	702,200	875,700	1,005,200	129,500
Construction	48,100	49,800	72,400	22,600
Manufacturing	85,300	102,200	108,600	6,400
Trade	320,500	382,400	413,700	31,300
Finance, Insurance, and Real Estate	62,300	93,400	124,100	30,700
Services	112,100	155,500	180,800	25,300
All Other Industries	73,900	92,400	105,600	13,200
Clerical and Kindred Workers	996,500	1,377,600	1,686,800	309,200
Stenos, Typists, and Secretaries	250,800	355,000	434,300	79,300
Office Machine Operators	44,100	81,100	119,800	38,700
Other Clerical and Kindred Workers	701,600	941,500	1,132,700	191,200
Bookkeepers, Hand	69,200	86,900	100,700	13,800
Bank Tellers	16,600	27,500	39,100	11,600
Cashiers	44,000	68,300	93,200	24,900
Mail Carriers	20,000	25,500	30,900	5,400
Postal Clerks	19,200	20,700	21,700	1,000
Shipping and Receiving Clerks	26,600	30,200	30,500	300
Telephone Operators	36,600	46,600	50,100	3,500

Table 2 (continued)

Occupational Category	1960	1968	1975	New Jobs 1968–1975
Clerical and Kindred Workers (cont.)				
Clerical and Kindred Workers, n.e.c.	469,400	635,800	766,500	130,700
Manufacturing	106,400	129,800	138,700	8,900
Trans., Comm., and Utilities	62,100	78,400	89,500	11,100
Trade	73,900	102,200	126,500	24,300
Finance, Insurance, and Real Estate	55,300	69,400	78,600	9,200
Services	89,300	161,600	225,500	63,900
Government (Administrative)	71,400	82,600	91,500	8,900
All Other Industries	11,000	11,800	16,200	4,400
Sales Workers	432,200	558,600	653,400	94,800
Insurance Agents and Brokers	32,900	42,700	50,100	7,400
Real Estate Agents and Brokers	40,000	55,100	68,200	13,100
Other Sales Workers, n.e.c.	359,300	460,800	535,100	74,300
Manufacturing	42,800	52,200	58,800	6,600
Trade	294,000	375,600	435,200	59,600
All Other Industries	22,500	33,000	41,100	8,100
Craftsmen, Foremen, and Kindred Workers	797,400	964,900	1,155,600	190,700
Construction Craftsmen	241,100	238,700	290,900	52,200
Carpenters	76,100	69,700	80,300	10,600
Brickmasons, Stone, Tile Setters	10,300	9,300	11,400	2,100
Cement and Concrete Finishers	7,800	8,200	11,900	3,700
Electricians	37,600	42,100	49,500	7,400
Excavating, Grading Machine Operators	18,000	19,900	28,100	8,200
Painters and Paperhangers	43,900	39,700	47,700	8,000
Plasterers	8,300	7,600	9,600	2,000
Plumbers and Pipefitters	28,400	29,900	37,000	7,100
Roofers and Slaters	4,500	4,400	6,000	1,600
Structural Metalworkers	6,200	7,900	9,400	1,500
Foremen, n.e.c.	95,400	123,800	152,700	28,900
Metalworking Craftsmen, Exc. Mechanics	105,400	124,600	128,200	3,600
Skilled Machining Workers	54,400	63,500	62,400	– 1,100
Blacksmiths, Forgemen, Hammermen	2,200	2,000	1,700	– 300
Boilermakers	2,200	2,500	2,700	200
Heat Treaters, Annealers, Temperers	1,100	1,200	1,200	0
Millwrights	2,900	3,600	4,100	500
Molders, Metal (Exc. Coremakers)	3,300	4,100	4,200	100
Patternmakers, Metal and Wood	3,900	5,200	6,000	800
Rollers and Roll Hands	1,600	2,000	2,200	200
Sheet Metal Workers	19,700	23,100	26,200	3,100
Toolmakers, Diemakers, Setters	14,100	17,400	17,500	100

Table 2 (continued)

Occupational Category	1960	1968	1975	New Jobs 1968–1975
Mechanics and Repairmen	194,800	276,100	350,800	74,700
Airplane Mechanics and Repairmen	23,700	30,800	34,700	3,900
Motor Vehicles Mechanics	58,000	77,800	94,300	16,500
Office Machine Mechanics	5,900	9,700	13,200	3,500
Radio and TV Mechanics	11,600	14,000	16,300	2,300
Railroad and Car Shop Mechanics	2,400	2,100	2,300	200
Other Mechanics and Repairmen	93,200	141,700	190,000	48,300
Printing Trades Craftsmen	25,900	30,500	34,000	3,500
Compositors and Typesetters	15,300	15,900	15,400	– 500
Electrotypers and Stereotypers	800	700	500	– 200
Engravers, Exc. Photoengravers	1,000	1,300	1,600	300
Photoengravers and Lithographers	2,400	4,300	6,300	2,000
Pressmen and Plate Printers	6,400	8,300	10,200	1,900
Trans. and Public Utility Craftsmen	35,000	45,500	52,800	7,300
Linemen and Servicemen	30,100	42,000	49,600	7,600
Locomotive Engineers	2,900	2,600	2,900	300
Locomotive Firemen	2,000	900	300	– 600
Other Craftsmen and Kindred Workers	99,800	125,700	146,200	20,500
Bakers	9,000	9,600	9,700	100
Cabinetmakers	8,400	9,500	10,700	1,200
Cranemen, Derrickmen, Hoistmen	6,100	8,300	10,500	2,200
Glaziers	2,100	2,800	4,000	1,200
Jewelers and Watchmakers	2,700	3,600	4,400	800
Millers	300	300	200	– 100
Opticians and Lens Grinders	1,600	2,100	2,400	300
Stationary Engineers	23,700	29,000	29,800	800
Inspectors, Log and Lumber	2,300	2,700	2,900	200
Inspectors, Other	6,600	8,900	11,700	2,800
Upholsterers	7,100	9,100	11,200	2,100
Craftsmen and Kindred Workers, n.e.c.	29,900	39,800	48,700	8,900
Operatives and Kindred Workers	871,500	1,102,700	1,267,800	165,100
Selected Trans. and Utility Operators	194,100	235,300	274,600	39,300
Drivers, Bus, Truck, Tractor	132,400	160,800	189,100	28,300
Deliverymen, Routemen, Cab Drivers	51,000	63,900	74,700	10,800
Brakemen and Switchmen, R.R.	5,500	5,400	6,300	900
Power Station Operators	1,500	1,800	1,900	100
Sailors and Deck Hands	3,700	3,400	2,600	– 800
Semiskilled Metalworking Occupations	98,000	127,000	139,400	12,400
Assemblers, Metalworking	65,400	83,700	90,300	6,600
Furnacemen, Smeltermen, Pourers	2,100	2,600	2,700	100
Heaters, Metal	300	400	400	0
Welders and Flame Cutters	30,200	40,300	46,000	5,700

Table 2 (continued)

Occupational Category	1960	1968	1975	New Jobs 1968–1975
Semiskilled Textile Occupations	28,000	32,900	36,800	3,900
Knitters, Spinners, Weavers	600	800	900	100
Sewers and Stitchers, Mfg.	27,400	32,100	35,900	3,800
Asbestos and Insulation Workers	1,400	1,600	1,900	300
Other Operatives and Kindred Workers	550,000	705,900	815,100	109,200
Auto Service and Parking Attendants	34,100	52,100	69,500	17,400
Blasters and Powdermen	200	200	200	0
Laundry and Dry Cleaning Workers	34,300	42,800	49,200	6,400
Mine Operatives and Laborers, n.e.c.	9,400	9,100	8,200	– 900
Meat Cutters, Exc. Meat Packing	18,600	23,100	26,000	2,900
Other Operatives, n.e.c.	453,400	578,600	662,000	83,400
Construction	12,600	14,800	23,300	8,500
Manufacturing	335,400	426,300	477,200	50,900
Trade	48,000	63,500	76,600	13,100
Services	30,100	43,700	52,600	8,900
All Other Industries	27,300	30,300	32,300	2,000
Service Workers	690,000	957,800	1,155,000	197,200
Private Household Workers	132,800	152,900	170,700	17,800
Protective Service Workers	72,700	101,400	128,200	26,800
Firemen, Fire Protection	17,300	23,700	30,200	6,500
Policemen, Marshals, Sheriffs	32,100	48,500	65,600	17,100
Guards, Watchmen	23,300	29,200	32,400	3,200
Waiters, Cooks, and Bartenders	157,300	237,000	289,900	52,900
Bartenders	16,400	23,400	27,400	4,000
Cooks, Exc. Private Household	48,000	72,500	88,200	15,700
Counter and Fountain Workers	11,700	19,500	26,200	6,700
Waiters and Waitresses	81,200	121,600	148,100	26,500
Other Service Workers	327,200	466,500	566,200	99,700
Attendants, Hospital and Other Institutions	26,600	51,600	76,400	24,800
Charwomen and Cleaners	11,400	16,100	18,700	2,600
Janitors and Sextons	83,000	107,400	114,600	7,200
Nurses, Practical	20,600	37,200	53,600	16,400
Other Service Workers, n.e.c.	185,600	254,200	302,900	48,700
Laborers, Except Farm and Mine	294,300	300,600	313,300	12,700
Farmers and Farm Workers	307,100	273,300	239,000	– 34,300

Table 3
Distribution of Jobs by Occupational Category, 1960, 1968, and 1975

	1960		1968		1975	
	Number	% of Total	Number	% of Total	Number	% of Total
Total, All Occupations	5,933,000	100*	7,724,000	100*	9,160,000	100*
Professional, Technical, and Kindred	814,900	13.74	1,275,300	16.51	1,637,000	17.87
Engineers, Tech.	119,500	2.01	176,100	2.28	226,700	2.47
Natural Scientists	26,700	.45	44,400	.57	60,100	.66
Technicians, Exc. Medical	91,600	1.54	142,100	1.84	188,000	2.05
Medical and Other Health Workers	132,100	2.23	217,000	2.81	284,000	3.10
Teachers	172,100	2.90	289,200	3.74	369,500	4.03
Social Scientists	4,100	.07	5,900	.08	7,500	.08
Other Professional, Technical, and Kindred	268,800	4.53	400,600	5.19	501,200	5.47
Managers, Officials, and Proprietors	729,100	12.29	913,200	11.82	1,052,100	11.49
Clerical and Kindred	996,500	16.80	1,377,600	17.84	1,686,800	18.41
Stenos, Typists, and Secretaries	250,800	4.23	355,000	4.60	434,300	4.74
Office Machine Operators	44,100	.74	81,100	1.05	119,800	1.31
Other Clerical and Kindred	701,600	11.83	941,500	12.19	1,132,700	12.37
Sales Workers	432,200	7.28	558,600	7.23	653,400	7.13
Insurance, Real Estate Agents	72,900	1.23	97,800	1.27	118,300	1.29
Other Sales Workers	359,300	6.06	460,800	5.97	535,100	5.84
Craftsmen, Foremen, Kindred	797,400	13.44	964,900	12.49	1,155,600	12.62
Construction Crafts	241,100	4.06	238,700	3.09	290,900	3.18
Metalworking Craftsmen	105,400	1.78	124,600	1.61	128,200	1.40
Mechanics and Repairmen	194,800	3.28	276,100	3.57	350,800	3.83
Printing Trades Crafts	25,900	.44	30,500	.39	34,000	.37
Trans., and Public Utility Crafts	35,000	.59	45,500	.59	52,800	.58
Other Craftsmen and Kindred	195,200	3.29	249,500	3.23	298,900	3.26
Operatives and Kindred	871,500	14.69	1,102,700	14.28	1,267,800	13.84
Trans. and Utilities Operator	194,100	3.27	235,300	3.05	274,600	3.00
Semiskilled Metalworking	98,000	1.65	127,000	1.64	139,400	1.52
All Other Operatives	579,400	9.77	740,400	9.59	853,800	9.32
Service Workers	690,000	11.63	957,800	12.40	1,155,000	12.61
Private Household	132,800	2.24	152,900	1.98	170,700	1.86
Protective Services	72,700	1.23	101,400	1.31	128,200	1.40
Waiters, Cooks, and Bartenders	157,300	2.65	237,000	3.07	289,900	3.16
Other Service Workers	327,200	5.51	466,500	6.04	566,200	6.18
Laborers, Except Farm and Mine	294,300	4.96	300,600	3.89	313,300	3.42
Farmers and Farm Workers	307,100	5.18	273,300	3.54	239,000	2.61

*Individual figures may not add to totals because of rounding.